IMBA Professional Plus (Vers. 4.0)

User Manual

Appendix C: Dose Quality Assurance

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Contents

C.1. QUALITY ASSURANCE PLAN 1

C.1.1. CRITERIA FOR ACCURACY OF DOSES CALCULATED BY IMBA EXPERT 1
C.1.2. USE OF BENCHMARK COMPARISONS OF DOSE COEFFICIENTS 1
C.1.3. EXCEPTIONS FOR PROGENY WITH DIFFERENT KINETICS FROM THE PARENT 2
C.1.4. QUALITY ASSURANCE OF SPECIAL OCAS/ORAU-EDITION FEATURES 3

C.2. BENCHMARK COMPARISONS OF COMMITTED DOSES 3

C.2.1. SUMMARY OF EFFECTIVE DOSE BENCHMARKS 4
C.2.2. SUMMARY OF INDIVIDUAL ORGAN/TISSUE DOSE BENCHMARKS 9
C.2.3. SUMMARY OF NON-RESPIRATORY-TRACT DOSE BENCHMARKS 14

C.3. BENCHMARKING OF DOSES INTEGRATED OVER VARIOUS TIMES 19

C.4. DOSE CALCULATIONS FOR MULTIPLE INTAKES 22

C.4.1. MULTIPLE INTAKES OF DIFFERENT TYPE 22

C.5. DOSE CALCULATIONS FOR TRUNCATED CHRONIC INTAKES 27

C.6. DOSE CALCULATIONS FOR ASSOCIATED RADIONUCLIDES 30

C.7. VARIABLE DEPOSITION PARAMETERS IN THE HRTM 33

C.8. DOSE CALCULATIONS FOR INTAKES OF THORIUM-230 33

C.8.1. Acute Inhalation (Type M: $f_1 = 0.0005$) 34
C.8.2. Acute Inhalation (Type S: $f_1 = 0.0002$) 34
C.8.3. Acute Ingestion ($f_1 = 0.0005$) 34
C.8.4. Acute Ingestion ($f_1 = 0.0002$) 35

C.9. PRACTICAL USE OF "MERGED" SHORT-LIVED PROGENY 35

C.9.1. DOSE CALCULATIONS FOR INTAKES OF ^{235}U/^{231}TH 36
C.9.1.1. Acute Inhalation (Type F: $f_1 = 0.02$) 37
C.9.1.2. Acute Inhalation (Type M: $f_1 = 0.02$) 37
C.9.1.3. Acute Inhalation (Type S: $f_1 = 0.002$) 37
C.9.1.4. Acute Ingestion ($f_1 = 0.02$) 38
C.9.1.5. Acute Ingestion ($f_1 = 0.002$) 38
C.9.2. DOSE CALCULATIONS FOR INTAKES OF ^{238}U/^{234}TH/^{234M}PA/^{234}PA 39
C.9.2.1. Acute Inhalation (Type F: $f_1 = 0.02$) 40
C.9.2.2. Acute Inhalation (Type M: $f_1 = 0.02$) 40
C.9.2.3. Acute Inhalation (Type S: $f_1 = 0.002$) 40
C.9.2.4. Acute Ingestion ($f_1 = 0.02$) 41
C.9.2.5. Acute Ingestion ($f_1 = 0.002$) 41

C.10. LISTING OF COMMITTED DOSE BENCHMARKS 42

C.10.1. ^{227}AC – ACTINIUM-227 42
C.10.1.1. Acute Inhalation (Type F: $f_1 = 0.0005$) 42
C.10.1.2. Acute Inhalation (Type M: $f_1 = 0.0005$) 42
C.10.1.3. Acute Inhalation (Type S: $f_1 = 0.0005$) 43
C.10.1.4. Acute Ingestion ($f_1 = 0.0005$) 43
C.10.2. ^{228}AC – ACTINIUM-228 43
C.10.2.1. Acute Inhalation (Type F: $f_1 = 0.0005$) 43
C.10.2.2. Acute Inhalation (Type M: $f_1 = 0.0005$) 44
C.10.2.3. Acute Inhalation (Type S: $f_1 = 0.0005$) 44
C.10.2.4. Acute Ingestion ($f_1 = 0.0005$) 44
C.10.3. ^{110M}AG – SILVER-110M 45

C.10.3.1. Acute Inhalation (Type F: f_1 = 0.05) *45*
C.10.3.2. Acute Inhalation (Type M: f_1 = 0.05) *45*
C.10.3.3. Acute Inhalation (Type S: f_1 = 0.05) *46*
C.10.3.4. Acute Ingestion (f_1 = 0.05) *46*
C.10.4. ^{241}Am – Americium-241 46
C.10.4.1. Acute Inhalation (Type M: f_1 = 0.0005) *46*
C.10.4.2. Acute Ingestion (f_1 = 0.0005) *47*
C.10.5. ^{243}Am – Americium-243 47
C.10.5.1. Acute Inhalation (Type M: f_1 = 0.0005) *47*
C.10.5.2. Acute Ingestion (f_1 = 0.0005) *47*
C.10.6. ^{74}As – Arsenic-74 48
C.10.6.1. Acute Inhalation (Type M: f_1 = 0.4999) *48*
C.10.6.2. Acute Ingestion (f_1 = 0.4999) *48*
C.10.7. ^{133}Ba – Barium-133 49
C.10.7.1. Acute Inhalation (Type F: f_1 = 0.1) *49*
C.10.7.2. Acute Ingestion (f_1 = 0.1) *49*
C.10.8. ^{140}Ba – Barium-140 50
C.10.8.1. Acute Inhalation (Type F: f_1 = 0.1) *50*
C.10.8.2. Acute Ingestion (f_1 = 0.1) *50*
C.10.9. ^{249}Bk – Berkelium-249 50
C.10.9.1. Acute Inhalation (Type M: f_1 = 0.0005) *50*
C.10.9.2. Acute Ingestion (f_1 = 0.0005) *51*
C.10.10. ^{14}C – Carbon-14 (Organic Particulate) 51
C.10.10.1. Acute Ingestion (f_1 = 0.99) *51*
C.10.11. ^{45}Ca – Calcium-45 52
C.10.11.1. Acute Inhalation (Type M: f_1 = 0.3) *52*
C.10.11.2. Acute Ingestion (f_1 = 0.3) *52*
C.10.12. ^{139}Ce – Cerium-139 53
C.10.12.1. Acute Inhalation (Type M: f_1 = 0.0005) *53*
C.10.12.2. Acute Inhalation (Type S: f_1 = 0.0005) *53*
C.10.12.3. Acute Ingestion (f_1 = 0.0005) *54*
C.10.13. ^{141}Ce – Cerium-141 54
C.10.13.1. Acute Inhalation (Type M: f_1 = 0.0005) *54*
C.10.13.2. Acute Inhalation (Type S: f_1 = 0.0005) *55*
C.10.13.3. Acute Ingestion (f_1 = 0.0005) *55*
C.10.14. ^{143}Ce – Cerium-143 55
C.10.14.1. Acute Inhalation (Type M: f_1 = 0.0005) *55*
C.10.14.2. Acute Inhalation (Type S: f_1 = 0.0005) *56*
C.10.14.3. Acute Ingestion (f_1 = 0.0005) *56*
C.10.15. ^{144}Ce – Cerium-144 56
C.10.15.1. Acute Inhalation (Type M: f_1 = 0.0005) *57*
C.10.15.2 Acute Inhalation (Type S: f_1 = 0.0005) *57*
C.10.15.3. Acute Ingestion (f_1 = 0.0005) *57*
C.10.16. ^{249}Cf – Californium-249 58
C.10.16.1. Acute Inhalation (Type M: f_1 = 0.0005) *58*
C.10.16.2. Acute Ingestion (f_1 = 0.0005) *58*
C.10.17. ^{252}Cf – Californium-252 58
C.10.17.1. Acute Inhalation (Type M: f_1 = 0.0005) *59*
C.10.17.2. Acute Ingestion (f_1 = 0.0005) *59*
C.10.18. ^{36}Cl – Chlorine-36 59
C.10.18.1. Acute Inhalation (Type F: f_1 = 0.99) *59*
C.10.18.2 Acute Inhalation (Type M: f_1 = 0.99) *60*
C.10.18.3. Acute Ingestion (f_1 = 0.99) *60*
C.10.19. ^{242}Cm – Curium-242 60
C.10.19.1. Acute Inhalation (Type M: f_1 = 0.0005) *61*
C.10.19.2. Acute Ingestion (f_1 = 0.0005) *61*

C.10.20. ^{243}CM – CURIUM-243 61
C.10.20.1. Acute Inhalation (Type M: f_1 = 0.0005) *61*
C.10.20.2. Acute Ingestion (f_1 = 0.0005) *62*
C.10.21. ^{244}CM – CURIUM-244 62
C.10.21.1 Acute Inhalation (Type M: f_1 = 0.0005) *62*
C.10.21.2. Acute Ingestion (f_1 = 0.0005) *63*
C.10.22. ^{57}CO – COBALT-57 63
C.10.22.1. Acute Inhalation (Type M: f_1 = 0.1) *63*
C.10.22.2. Acute Inhalation (Type S: f_1 = 0.05) *63*
C.10.22.3 Acute Ingestion (f_1 = 0.1) *64*
C.10.22.4 Acute Ingestion (f_1 = 0.05) *64*
C.10.23. ^{58}CO – COBALT-58 64
C.10.23.1. Acute Inhalation (Type M: f_1 = 0.1) *65*
C.10.23.2. Acute Inhalation (Type S: f_1 = 0.05) *65*
C.10.23.3. Acute Ingestion (f_1 = 0.1) *65*
C.10.23.4. Acute Ingestion (f_1 = 0.05) *66*
C.10.24. ^{60}CO – COBALT-60 66
C.10.24.1. Acute Inhalation (Type M: f_1 = 0.1) *66*
C.10.24.2. Acute Inhalation (Type S: f_1 = 0.05) *66*
C.10.24.3. Acute Ingestion (f_1 = 0.1) *67*
C.10.24.4. Acute Ingestion (f_1 = 0.05) *67*
C.10.25. ^{51}CR – CHROMIUM-51 67
C.10.25.1. Acute Inhalation (Type F: f_1 = 0.1) *68*
C.10.25.2. Acute Inhalation (Type M: f_1 = 0.1) *68*
C.10.25.3. Acute Inhalation (Type S: f_1 = 0.1) *68*
C.10.25.4. Acute Ingestion (f_1 = 0.1) *69*
C.10.25.5 Acute Ingestion (f_1 = 0.01) *69*
C.10.26. ^{134}CS – CESIUM-134 69
C.10.26.1 Acute Inhalation (Type F: f_1 = 0.99) *69*
C.10.26.2 Acute Ingestion (f_1 = 0.99) *70*
C.10.27. ^{137}CS – CESIUM-137 70
C.10.27.1. Acute Inhalation (Type F: f_1 = 0.99) *70*
C.10.27.2. Acute Ingestion (f_1 = 0.99) *71*
C.10.28. ^{152}EU – EUROPIUM-152 71
C.10.28.1. Acute Inhalation (Type M: f_1 = 0.0005) *71*
C.10.28.2. Acute Ingestion (f_1 = 0.0005) *71*
C.10.29. ^{154}EU – EUROPIUM-154 72
C.10.29.1. Acute Inhalation (Type M: f_1 = 0.0005) *72*
C.10.29.2. Acute Ingestion (f_1 = 0.0005) *72*
C.10.30. ^{155}EU – EUROPIUM-155 73
C.10.30.1. Acute Inhalation (Type M: f_1 = 0.0005) *73*
C.10.30.2. Acute Ingestion (f_1 = 0.0005) *73*
C.10.31. ^{156}EU – EUROPIUM-156 73
C.10.31.1. Acute Inhalation (Type M: f_1 = 0.0005) *74*
C.10.31.2. Acute Ingestion (f_1 = 0.0005) *74*
C.10.32. ^{55}FE – IRON-55 74
C.10.32.1. Acute Inhalation (Type F: f_1 = 0.1) *74*
C.10.32.2. Acute Inhalation (Type M: f_1 = 0.1) *75*
C.10.32.3. Acute Ingestion (f_1 = 0.1) *75*
C.10.33. ^{59}FE – IRON-59 75
C.10.33.1. Acute Inhalation (Type F: f_1 = 0.1) *76*
C.10.33.2. Acute Inhalation (Type M: f_1 = 0.1) *76*
C.10.33.3. Acute Ingestion (f_1 = 0.1) *76*
C.10.34A. ^{3}H – HYDROGEN-3 (TRITIUM – ORGANIC) 77
C.10.34A.1. Acute Injection (f_1 = 0.99) *77*
C.10.34A.2. Acute Ingestion (f_1 = 0.99) *77*

C.10.34B. ^{3}H – HYDROGEN-3 (TRITIATED WATER – INORGANIC) 78
C.10.34B.1. Acute Injection (f_1 = 0.99) *78*
C.10.34B.2. Acute Ingestion (f_1 = 0.99) *78*
C.10.35. ^{181}HF – HAFNIUM-181 78
C.10.35.1. Acute Inhalation (Type F: f_1 = 0.002) *79*
C.10.35.2. Acute Inhalation (Type M: f_1 = 0.002) *79*
C.10.35.3. Acute Ingestion (f_1 = 0.002) *79*
C.10.36A. ^{203}HG – MERCURY-203 INORGANIC 80
C.10.36A.1. Vapor (f_1 = 0.99) *80*
C.10.36A.2. Acute Inhalation (Type F: f_1 = 0.02) *80*
C.10.36A.3. Acute Inhalation (Type M: f_1 = 0.02) *80*
C.10.36A.4. Acute Ingestion (f_1 = 0.02) *81*
C.10.36B. ^{203}HG – MERCURY-203 ORGANIC 81
C.10.36B.1. Acute Inhalation (Type F: f_1 = 0.4) *81*
C.10.36B.2. Acute Ingestion (f_1 = 0.99) *82*
C.10.36B.3. Acute Ingestion (f_1 = 0.4) *82*
C.10.37. ^{125}I – IODINE-125 (PARTICULATE) 82
C.10.37.1. Acute Inhalation (Type F: f_1 = 0.99) *82*
C.10.37.2. Acute Ingestion (f_1 = 0.99) *83*
C.10.38. ^{129}I – IODINE-129 (PARTICULATE) 83
C.10.38.1. Acute Inhalation (Type F: f_1 = 0.99) *83*
C.10.38.2. Acute Ingestion (f1 = 0.99) *84*
C.10.39. ^{131}I – IODINE-131 (PARTICULATE) 84
C.10.39.1. Acute Inhalation (Type F: f_1 = 0.99) *84*
C.10.39.2. Acute Ingestion (f_1 = 0.99) *84*
C.10.40. ^{133}I – IODINE-133 (PARTICULATE) 85
C.10.40.1. Acute Inhalation (Type F: f_1 = 0.99) *85*
C.10.40.2. Acute Ingestion (f_1 = 0.99) *85*
C.10.41. ^{134}I – IODINE-134 (PARTICULATE) 86
C.10.41.1. Acute Inhalation (Type F: f_1 = 0.99) *86*
C.10.41.2. Acute Ingestion (f_1 = 0.99) *86*
C.10.42. ^{135}I – IODINE-135 (PARTICULATE) 86
C.10.42.1. Acute Inhalation (Type F: f_1 = 0.99) *86*
C.10.42.2. Acute Ingestion (f_1 = 0.99) *87*
C.10.43. ^{192}IR – IRIDIUM-192 87
C.10.43.1. Acute Inhalation (Type F: f_1 = 0.01) *87*
C.10.43.2. Acute Inhalation (Type M; f_1 = 0.01) *88*
C.10.43.3. Acute Inhalation (Type S: f_1 = 0.01) *88*
C.10.43.4. Acute Ingestion (f_1 = 0.01) *88*
C.10.44. ^{140}LA – LANTHANUM-140 89
C.10.44.1. Acute Inhalation (Type F: f_1 = 0.0005) *89*
C.10.44.2. Acute Inhalation (Type M: f_1 = 0.0005) *89*
C.10.44.3. Acute Ingestion (f_1 = 0.0005) *89*
C.10.45. ^{174}LU – LUTETIUM-174 90
C.10.45.1. Acute Inhalation (Type M: f_1 = 0.0005) *90*
C.10.45.2. Acute Inhalation (Type S: f_1 = 0.0005) *90*
C.10.45.3. Acute Ingestion (f_1 = 0.0005) *91*
C.10.46. ^{54}MN – MANGANESE-54 91
C.10.46.1. Acute Inhalation (Type F: f_1 = 0.1) *91*
C.10.46.2. Acute Inhalation (Type M: f_1 = 0.1) *91*
C.10.46.3. Acute Ingestion (f_1 = 0.1) *92*
C.10.47. ^{99}MO – MOLYBDENUM-99 92
C.10.47.1. Acute Inhalation (Type F: f_1 = 0.8) *92*
C.10.47.2. Acute Inhalation (Type S; f_1 = 0.05) *93*
C.10.47.3. Acute Ingestion (f_1 = 0.8) *93*
C.10.47.4. Acute Ingestion (f_1 = 0.05) *93*

C.10.48. ^{22}Na – Sodium-22 94
C.10.48.1. Acute Inhalation (Type F: f_1 = 0.99) *94*
C.10.48.2. Acute Ingestion (f_1 = 0.99) *94*
C.10.49. ^{24}Na – Sodium-24 94
C.10.49.1. Acute Inhalation (Type F: f_1 = 0.99) *95*
C.10.49.2. Acute Ingestion (f_1 = 0.99) *95*
C.10.50. ^{94}Nb – Niobium-94 95
C.10.50.1. Acute Inhalation (Type M: f_1 = 0.01) *95*
C.10.50.2. Acute Inhalation (Type S: f_1 = 0.01) *96*
C.10.50.3. Acute Ingestion (f_1 = 0.01) *96*
C.10.51. ^{95}Nb – Niobium-95 96
C.10.51.1. Acute Inhalation (Type M: f_1 = 0.01) *97*
C.10.51.2. Acute Inhalation (Type S: f_1 = 0.01) *97*
C.10.51.3. Acute Ingestion (f_1 = 0.01) *97*
C.10.52. ^{63}Ni – Nickel-63 98
C.10.52.1. Acute Inhalation (Type F: f_1 = 0.05) *98*
C.10.52.2. Acute Inhalation (Type M: f_1 = 0.05) *98*
C.10.52.3. Acute Ingestion (f_1 = 0.05) *98*
C.10.53. ^{237}Np – Neptunium-237 99
C.10.53.1. Acute Inhalation (Type M: f_1 = 0.0005) *99*
C.10.53.2. Acute Ingestion (f_1 = 0.0005) *99*
C.10.54. ^{239}Np – Neptunium-239 100
C.10.54.1. Acute Inhalation (Type M: f_1 = 0.0005) *100*
C.10.54.2. Acute Ingestion (f_1 = 0.0005) *100*
C.10.55. ^{32}P – Phosphorus-32 100
C.10.55.1. Acute Inhalation (Type F: f_1 = 0.8) *101*
C.10.55.2. Acute Inhalation (Type M: f_1 = 0.8) *101*
C.10.55.3. Acute Ingestion (f_1 = 0.8) *101*
C.10.56. ^{33}P – Phosphorus-33 102
C.10.56.1. Acute Inhalation (Type F: f_1 = 0.8) *102*
C.10.56.2. Acute Inhalation (Type M: f_1 = 0.8) *102*
C.10.56.3. Acute Ingestion (f_1 = 0.8) *102*
C.10.57. ^{231}Pa – Protactinium-231 103
C.10.57.1. Acute Inhalation (Type M: f_1 = 0.0005) *103*
C.10.57.2. Acute Inhalation (Type S: f_1 = 0.0005) *103*
C.10.57.3. Acute Ingestion (f_1 = 0.0005) *103*
C.10.58. ^{233}Pa – Protactinium-233 104
C.10.58.1. Acute Inhalation (Type M: f_1 = 0.0005) *104*
C.10.58.2. Acute Inhalation (Type S: f_1 = 0.0005) *104*
C.10.58.3. Acute Ingestion (f_1 = 0.0005) *105*
C.10.59. ^{234}Pa – Protactinium-234 105
C.10.59.1. Acute Inhalation (Type M: f_1 = 0.0005) *105*
C.10.59.2. Acute Inhalation (Type S: f_1 = 0.0005) *105*
C.10.59.3. Acute Ingestion (f_1 = 0.0005) *106*
C.10.60. ^{210}Pb – Lead-210 (PLEIADES and ICRP: Independent Progeny Kinetics) 106
C.10.60.1. Acute Inhalation (Type F: f_1 = 0.2) *106*
C.10.60.2. Acute Ingestion (f_1 = 0.2) *107*
C.10.61. ^{147}Pm – Promethium-147 107
C.10.61.1. Acute Inhalation (Type M: f_1 = 0.0005) *107*
C.10.61.2. Acute Inhalation (Type S: f_1 = 0.0005) *107*
C.10.61.3. Acute Ingestion (f_1 = 0.0005) *108*
C.10.62. ^{208}Po – Polonium-208 108
C.10.62.1. Acute Inhalation (Type F: f_1 = 0.1) *108*
C.10.62.2. Acute Inhalation (Type M: f_1 = 0.1) *109*
C.10.62.3. Acute Ingestion (f_1 = 0.1) *109*
C.10.63. ^{209}Po – Polonium-209 109

C.10.63.1. Acute Inhalation (Type F: f_1 = 0.1) *109*
C.10.63.2. Acute Inhalation (Type M: f_1 = 0.1) *110*
C.10.63.3. Acute Ingestion (f_1 = 0.1) *110*
C.10.64. ^{210}Po – Polonium-210 111
C.10.64.1. Acute Inhalation (Type F: f_1 = 0.1) *111*
C.10.64.2. Acute Inhalation (Type M: f_1 = 0.1) *111*
C.10.64.3. Acute Ingestion (f_1 = 0.1) *111*
C.10.65. ^{143}Pr – Praseodymium-143 112
C.10.65.1. Acute Inhalation (Type M: f_1 = 0.0005) *112*
C.10.65.2. Acute Inhalation (Type S: f_1 = 0.0005) *112*
C.10.65.3. Acute Ingestion (f_1 = 0.0005) *113*
C.10.66. ^{147}Pr – Praseodymium-147 113
C.10.66.1. Acute Inhalation (Type M: f_1 = 0.0005) *113*
C.10.66.2. Acute Inhalation (Type S: f_1 = 0.0005) *113*
C.10.66.3. Acute Ingestion (f_1 = 0.0005) *114*
C.10.67. ^{238}Pu – Plutonium-238 114
C.10.67.1. Acute Inhalation (Type M: f_1 = 0.0005) *114*
C.10.67.2. Acute Inhalation (Type S: f_1 = 0.00001) *114*
C.10.67.3. Acute Ingestion (f_1 = 0.0005) *115*
C.10.67.4. Acute Ingestion (f_1 = 0.0001) *115*
C.10.67.5. Acute Ingestion (f_1 = 0.00001) *115*
C.10.68. ^{239}Pu – Plutonium-239 116
C.10.68.1. Acute Inhalation (Type M: f_1 = 0.0005) *116*
C.10.68.2. Acute Inhalation (Type S: f_1 = 0.00001) *116*
C.10.68.3. Acute Ingestion (f_1 = 0.0005) *117*
C.10.68.4. Acute Ingestion (f_1 = 0.0001) *117*
C.10.68.5. Acute Ingestion (f_1 = 0.00001) *117*
C.10.69. ^{240}Pu – Plutonium-240 118
C.10.69.1. Acute Inhalation (Type M: f_1 = 0.0005) *118*
C.10.69.2. Acute Inhalation (Type S: f_1 = 0.00001) *118*
C.10.69.3. Acute Ingestion (f_1 = 0.0005) *118*
C.10.69.4. Acute Ingestion (f_1 = 0.0001) *119*
C.10.69.5. Acute Ingestion (f_1 = 0.00001) *119*
C.10.70. ^{241}Pu – Plutonium-241 119
C.10.70.1. Acute Inhalation (Type M: f_1 = 0.0005) *120*
C.50.70.2. Acute Inhalation (Type S: f_1 = 0.00001) *120*
C.10.70.3. Acute Ingestion (f_1 = 0.0005) *120*
C.10.70.4. Acute Ingestion (f_1 = 0.0001) *121*
C.10.70.5. Acute Ingestion (f_1 = 0.00001) *121*
C.10.71. ^{242}Pu – Plutonium-242 121
C.10.71.1. Acute Inhalation (Type M: f_1 = 0.0005) *121*
C.10.71.2. Acute Inhalation (Type S: f_1 = 0.00001) *122*
C.10.71.3. Acute Ingestion (f_1 = 0.0005) *122*
C.10.71.4. Acute Ingestion (f_1 = 0.0001) *122*
C.10.71.5. Acute Ingestion (f_1 = 0.00001) *123*
C.10.72. ^{223}Ra – Radium-223 (PLEIADES and ICRP: Independent Progeny Kinetics) 123
C.10.72.1. Acute Inhalation (Type M: f_1 = 0.2) *123*
C.10.72.2. Acute Ingestion (f_1 = 0.2) *124*
C.10.73. ^{224}Ra – Radium-224 (PLEIADES and ICRP: Independent Progeny Kinetics) 124
C.10.73.1. Acute Inhalation (Type M: f_1 = 0.2) *124*
C.10.73.2. Acute Ingestion (f_1 = 0.2) *124*
C.10.74. ^{226}Ra – Radium-226 (PLEIADES and ICRP: Independent Progeny Kinetics) 125
C.10.74.1. Acute Inhalation (Type M: f_1 = 0.2) *125*
C.10.74.2. Acute Ingestion (f_1 = 0.2) *125*
C.10.75. ^{228}Ra – Radium-228 (PLEIADES and ICRP: Independent Progeny Kinetics) 126
C.10.75.1. Acute Inhalation (Type M: f_1 = 0.2) *126*

C.10.75.2. Acute Ingestion (f_1 = 0.2) ... *126*
C.10.76. ^{103}Ru – Ruthenium-103 ... 126
C.10.76.1. Acute Inhalation (Type F: f_1 = 0.05) ... *127*
C.10.76.2. Acute Inhalation (Type M: f_1 = 0.05) ... *127*
C.10.76.3 Acute Inhalation (Type S: f_1 = 0.05) ... *127*
C.10.76.4 Acute Ingestion (f_1 = 0.05) ... *128*
C.10.77. ^{106}Ru – Ruthenium-106 ... 128
C.10.77.1. Acute Inhalation (Type F: f_1 = 0.05) ... *128*
C.10.77.2. Acute Inhalation (Type M: f_1 = 0.05) ... *128*
C.10.77.3. Acute Inhalation (Type S: f_1 = 0.05) ... *129*
C.10.77.4. Acute Ingestion (f_1 = 0.05) ... *129*
C.10.78A. ^{35}S – Sulfur-35 (Organic Particulate) ... 129
C.10.78A.1 Acute Ingestion (f_1 = 0.99) ... *130*
C.10.78B. ^{35}S – Sulfur-35 (Inorganic Particulate) ... 130
C.10.78B.1. Acute Inhalation (Type F: f_1 = 0.8) ... *130*
C.10.78B.2. Acute Inhalation (Type M: f_1 = 0.8) ... *130*
C.10.78B.3. Acute Ingestion (f_1 = 0.8) ... *131*
C.10.78B.4. Acute Ingestion (f_1 = 0.1) ... *131*
C.10.79. ^{124}Sb – Antimony-124 ... 131
C.10.79.1. Acute Inhalation (Type F: f_1 = 0.1) ... *132*
C.10.79.2. Acute Inhalation (Type M: f_1 = 0.01) ... *132*
C.10.79.3. Acute Ingestion (f_1 = 0.1) ... *132*
C.10.80. ^{125}Sb – Antimony-125 ... 133
C.10.80.1. Acute Inhalation (Type F: f_1 = 0.1) ... *133*
C.10.80.2. Acute Inhalation (Type M: f_1 = 0.01) ... *133*
C.10.80.3. Acute Ingestion (f_1 = 0.1) ... *133*
C.10.81. ^{46}Sc – Scandium-46 ... 134
C.10.81.1. Acute Inhalation (Type S: f_1 = 0.0001) ... *134*
C.10.81.2. Acute Ingestion (f_1 = 0.0001) ... *134*
C.10.82. ^{151}Sm – Samarium-151 ... 135
C.10.82.1. Acute Inhalation (Type M: f_1 = 0.0005) ... *135*
C.10.82.2. Acute Ingestion (f_1 = 0.0005) ... *135*
C.10.83. ^{113}Sn – Tin-113 ... 135
C.10.83.1. Acute Inhalation (Type F: f_1 = 0.02) ... *135*
C.10.83.2. Acute Inhalation (Type M: f_1 = 0.02) ... *136*
C.10.83.3. Acute Ingestion (f_1 = 0.02) ... *136*
C.10.84. ^{85}Sr – Strontium-85 ... 137
C.10.84.1. Acute Inhalation (Type F: f_1 = 0.3) ... *137*
C.10.84.2. Acute Inhalation (Type S: f_1 = 0.01) ... *137*
C.10.84.3. Acute Ingestion (f_1 = 0.3) ... *137*
C.10.84.4. Acute Ingestion (f_1 = 0.01) ... *138*
C.10.85. ^{89}Sr – Strontium-89 ... 138
C.10.85.1. Acute Inhalation (Type F: f_1 = 0.3) ... *138*
C.10.85.2. Acute Inhalation (Type S: f_1 = 0.01) ... *138*
C.10.85.3. Acute Ingestion (f_1 = 0.3) ... *139*
C.10.85.4. Acute Ingestion (f_1 = 0.01) ... *139*
C.10.86. ^{90}Sr – Strontium-90 ... 140
C.10.86.1. Acute Inhalation (Type F: f_1 = 0.3) ... *140*
C.10.86.2. Acute Inhalation (Type S: f_1 = 0.01) ... *140*
C.10.86.3. Acute Ingestion (f_1 = 0.3) ... *140*
C.10.86.4. Acute Ingestion (f_1 = 0.01) ... *141*
C.10.87. ^{91}Sr – Strontium-91 ... 141
C.10.87.1. Acute Inhalation (Type F: f_1 = 0.3) ... *141*
C.10.87.2. Acute Inhalation (Type S: f_1 = 0.01) ... *141*
C.10.87.3. Acute Ingestion (f_1 = 0.3) ... *142*
C.10.87.4. Acute Ingestion (f_1 = 0.01) ... *142*

C.10.88. ^{182}TA – TANTALUM-182 143
C.10.88.1. Acute Inhalation (Type M: f_1 = 0.001) *143*
C.10.88.2. Acute Inhalation (Type S: f_1 = 0.001) *143*
C.10.88.3. Acute Ingestion (f_1 = 0.001) *143*
C.10.89. ^{160}TB – TERBIUM-160 144
C.10.89.1. Acute Inhalation (Type M: f_1 = 0.0005) *144*
C.10.89.2. Acute Ingestion (f_1 = 0.0005) *144*
C.10.90. ^{99}TC – TECHNETIUM-99 145
C.10.90.1. Acute Inhalation (Type F: f_1 = 0.8) *145*
C.10.90.2. Acute Inhalation (Type M: f_1 = 0.8) *145*
C.10.90.3. Acute Ingestion (f_1 = 0.8) *145*
C.10.91. ^{131}TE – TELLURIUM-131 (PLEIADES AND ICRP: INDEPENDENT PROGENY KINETICS) 146
C.10.91.1. Vapor (f_1 = 0.3) *146*
C.10.91.2. Acute Inhalation (Type F: f_1 = 0.3) *146*
C.10.91.3. Acute Inhalation (Type M: f_1 = 0.3) *147*
C.10.91.4. Acute Ingestion (f_1 = 0.3) *147*
C.10.92. ^{131M}TE – TELLURIUM-131M (PLEIADES AND ICRP: INDEPENDENT PROGENY KINETICS) 147
C.10.92.1. Vapor (f_1 = 0.3) *148*
C.10.92.2. Acute Inhalation (Type F: f_1 = 0.3) *148*
C.10.92.3. Acute Inhalation (Type M: f_1 = 0.3) *148*
C.10.92.4. Acute Ingestion (f_1 = 0.3) *149*
C.10.93. ^{228}TH – THORIUM-228 (PLEIADES AND ICRP: INDEPENDENT PROGENY KINETICS) 149
C.10.93.1. Acute Inhalation (Type M: f_1 = 0.0005) *149*
C.10.93.2. Acute Inhalation (Type S: f_1 = 0.0002) *150*
C.10.93.3. Acute Ingestion (f_1 = 0.0005) *150*
C.10.93.4. Acute Ingestion (f_1 = 0.0002) *150*
C.10.94. ^{230}TH – THORIUM-230 (PLEIADES AND ICRP: INDEPENDENT PROGENY KINETICS) 151
C.10.94.1. Acute Inhalation (Type M: f_1 = 0.0005) *151*
C.10.94.2. Acute Inhalation (Type S: f_1 = 0.0002) *151*
C.10.94.3. Acute Ingestion (f_1 = 0.0005) *151*
C.10.94.4 Acute Ingestion (f_1 = 0.0002) *152*
C.10.95. ^{232}TH – THORIUM-232 (PLEIADES AND ICRP: INDEPENDENT PROGENY KINETICS) 152
C.10.95.1. Acute Inhalation (Type M: f_1 = 0.0005) *152*
C.10.95.2. Acute Inhalation (Type S: f_1 = 0.0002) *153*
C.10.95.3. Acute Ingestion (f_1 = 0.0005) *153*
C.10.95.4. Acute Ingestion (f_1 = 0.0002) *153*
C.10.96. ^{234}TH – THORIUM-234 (PLEIADES AND ICRP: INDEPENDENT PROGENY KINETICS) 154
C.10.96.1. Acute Inhalation (Type M: f_1 = 0.0005) *154*
C.10.96.2. Acute Inhalation (Type S: f_1 = 0.0002) *154*
C.10.96.3. Acute Ingestion (f_1 = 0.0005) *154*
C.10.96.4. Acute Ingestion (f_1 = 0.0002) *155*
C.10.97. ^{201}TL – THALLIUM-201 155
C.10.97.1. Acute Inhalation (Type F: f_1 = 0.99) *155*
C.10.97.2. Acute Ingestion (f_1 = 0.99) *155*
C.10.98. ^{202}TL – THALLIUM-202 156
C.10.98.1. Acute Inhalation (Type F: f_1 = 0.99) *156*
C.10.98.2. Acute Ingestion (f_1 = 0.99) *156*
C.10.99. ^{204}TL – THALLIUM-204 157
C.10.99.1. Acute Inhalation (Type F: f_1 = 0.99) *157*
C.10.99.2. Acute Ingestion (f_1 = 0.99) *157*
C.10.100. ^{170}TM – THULIUM-170 158
C.10.100.1. Acute Inhalation (Type M: f_1 = 0.0005) *158*
C.10.100.2. Acute Ingestion (f_1 = 0.99) *158*
C.10.101. ^{232}U – URANIUM-232 (PLEIADES AND ICRP: INDEPENDENT PROGENY KINETICS) 158
C.10.101.1. Acute Inhalation (Type F: f_1 = 0.02) *159*
C.10.101.2. Acute Inhalation (Type M: f_1 = 0.02) *159*

C.10.101.3. Acute Inhalation (Type S: f_1 = 0.002) *159*
C.10.101.4. Acute Ingestion (f_1 = 0.02) *160*
C.10.101.5. Acute Ingestion (f_1 = 0.002) *160*
C.10.102. ^{234}U – URANIUM-234 160
C.10.102.1. Acute Inhalation (Type F: f_1 = 0.02) *161*
C.10.102.2. Acute Inhalation (Type M: f_1 = 0.02) *161*
C.10.102.3. Acute Inhalation (Type S: f_1 = 0.002) *161*
C.10.102.4. Acute Ingestion (f_1 = 0.002) *162*
C.10.103. ^{235}U – URANIUM-235 162
C.10.103.1. Acute Inhalation (Type F: f_1 = 0.02) *162*
C.10.103.2. Acute Inhalation (Type M: f_1 = 0.02) *162*
C.10.103.3. Acute Inhalation (Type S: f_1 = 0.002) *163*
C.10.103.4. Acute Ingestion (f_1 = 0.02) *163*
C.10.103.5. Acute Ingestion (f_1 = 0.002) *163*
C.10.104. ^{236}U – URANIUM-236 164
C.10.104.1. Acute Inhalation (Type F: f_1 = 0.02) *164*
C.10.104.2. Acute Inhalation (Type M: f_1 = 0.02) *164*
C.10.104.3. Acute Inhalation (Type S: f_1 = 0.002) *165*
C.10.104.4. Acute Ingestion (f_1 = 0.02) *165*
C.10.104.5. Acute Ingestion (f_1 = 0.002) *165*
C.10.105. ^{238}U – URANIUM-238 166
C.10.105.1. Acute Inhalation (Type F: f_1 = 0.02) *166*
C.10.105.2. Acute Inhalation (Type M: f_1 = 0.02) *166*
C.10.105.3. Acute Inhalation (Type S: f_1 = 0.002) *166*
C.10.105.4. Acute Ingestion (f_1 = 0.02) *167*
C.10.105.5. Acute Ingestion (f_1 = 0.002) *167*
C.10.106. ^{239}U – URANIUM-239 167
C.10.106.1. Acute Inhalation (Type F: f_1 = 0.02) *167*
C.10.106.2. Acute Inhalation (Type M: f_1 = 0.02) *168*
C.10.106.3. Acute Inhalation (Type S: f_1 = 0.002) *168*
C.10.106.4. Acute Ingestion (f_1 = 0.02) *168*
C.10.106.5. Acute Ingestion (f_1 = 0.002) *169*
C.10.107. ^{88}Y – YTTRIUM-88 169
C.10.107.1. Acute Inhalation (Type M: f_1 = 0.0001) *169*
C.10.107.2. Acute Inhalation (Type S: f_1 = 0.0001) *170*
C.10.107.3. Acute Ingestion (f_1 = 0.0001) *170*
C.10.108. ^{90}Y – YTTRIUM-90 170
C.10.108.1. Acute Inhalation (Type M: f_1 = 0.0001) *170*
C.10.108.2. Acute Inhalation (Type S: f_1 = 0.0001) *171*
C.10.108.3. Acute Ingestion (f_1 = 0.0001) *171*
C.10.109. ^{91}Y – YTTRIUM-91 172
C.10.110.1. Acute Inhalation (Type M: f_1 = 0.0001) *172*
C.10.109.2. Acute Inhalation (Type S: f_1 = 0.0001) *172*
C.10.109.3. Acute Ingestion (f_1 = 0.0001) *172*
C.10.110. ^{169}YB – YTTERBIUM-169 173
C.10.110.1. Acute Inhalation (Type M: f_1 = 0.0005) *173*
C.10.110.2. Acute Inhalation (Type S: f_1 = 0.0005) *173*
C.10.110.3. Acute Ingestion (f_1 = 0.0005) *174*
C.10.111. ^{65}ZN – ZINC-65 174
C.10.111.1. Acute Inhalation (Type S: f_1 = 0.4999) *174*
C.10.111.2. Acute Ingestion (f_1 = 0.4999) *174*
C.10.112. ^{95}ZR – ZIRCONIUM-95 175
C.10.112.1. Acute Inhalation (Type F: f_1 = 0.002) *175*
C.10.112.2. Acute Inhalation (Type M: f_1 = 0.002) *175*
C.10.112.3. Acute Inhalation (Type S: f_1 = 0.002) *176*
C.10.112.4. Acute Ingestion (f_1 = 0.002) *176*

C.11. QA OF DOSES RECEIVED EACH YEAR 177

C.11.1. VALIDATION OF DOSES CALCULATED FOR COMPLETE CALENDAR YEARS 177
C.11.2. VALIDATION OF DOSES CALCULATED FOR FINAL (PARTIAL) CALENDAR YEAR 177
C.11.3. EXAMPLES OF QA RESULTS 177
C.11.3.1. 1-y Dose (non-leap year) *178*
C.11.3.2. 10-y Dose *179*
C.11.3.3. 45-y Dose *180*
C.11.3.4. Final-y dose (1-d interval) *181*
C.11.3.5. Final-y dose (10-d interval) *182*
C.11.3.5. Final-y dose (100-d interval) *183*

C.12. REFERENCES 184

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C.1. Quality Assurance Plan

The primary method used to quality assure the IMBA Expert™ OCAS/ORAU-Edition calculations of doses for all implemented radionuclides was to carry out an exhaustive "benchmark" comparison with doses calculated by the HPA-RPD's "in house" **PLEIADES** internal dosimetry code. **PLEIADES** was one of the codes used by the International Commission on Radiological Protection's (ICRP's) Task Group on Dose Calculations (DOCAL) to calculate the dose coefficients for ICRP Publications 67, 68, 69, 71 and 72 (ICRP 1993; 1994a; 1995a; 1995b; 1996). **PLEIADES** was also used to calculate the dose coefficients for "The ICRP Database of Dose Coefficients: Workers and Members of the Public" (ICRP 1998), and the dose coefficients for the International Atomic Energy Agency's (IAEA's) "Safety Series No. 115: International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources" (IAEA 1996).

In addition to the "benchmark" comparisons of dose coefficients calculated by IMBA Expert™ OCAS/ORAU-Edition and **PLEIADES**, the quality assurance plan included comprehensive testing of all special dose calculation features incorporated in IMBA Expert™ OCAS/ORAU-Edition, *e.g.*, calculation of committed doses from multiple intakes, truncated chronic intakes, and multiple associated radionuclides.

C.1.1. Criteria for Accuracy of Doses Calculated by IMBA Expert

The criteria adopted for establishing the accuracy of doses calculated by IMBA Expert™ OCAS/ORAU-Edition in the benchmark comparison against corresponding values calculated by **PLEIADES** were that:

- Doses calculated for ALL target organs, integrated over ten dose periods (from 1 d to 50 y) after an acute inhalation and/or ingestion, are within ± 1% of the corresponding values calculated by **PLEIADES**. The ten dose periods are 1 d, 7 d, 30 d, 1 y, 5 y, 10 y, 30 y, 45 y and 50 y.
- The 50 y committed effective dose, and ALSO the committed dose for the "remainder tissues" [(a)] are within ± 1% of the corresponding values calculated by **PLEIADES**.

These benchmark comparisons were carried out for so-called "dose coefficients", *i.e.*, for the doses resulting from **unit intake** of a specified radionuclide. By definition, for radionuclides that are the parent of a decay chain, the dose coefficient (as tabulated by ICRP) applies ONLY for intake of the parent radionuclide. It does NOT include any associated intake of initial, short-lived radioactive progeny. In accordance with all ICRP tabulations, **PLEIADES** calculates the in-growth of progeny radionuclides over the period of integration, and includes the resulting additional doses in the overall "dose coefficient" for intake of unit activity of the parent.

C.1.2. Use of Benchmark Comparisons of Dose Coefficients

If the dose coefficients calculated by IMBA Expert™ OCAS/ORAU-Edition meet the above **criteria for accuracy**, it is established (for the radionuclide examined) that:

1. IMBA Expert™ OCAS/ORAU-Edition's implementation of the currently recommended systemic metabolic[(a)] or biokinetic[(b)] model for the radioelement concerned is adequate for the purpose of calculating doses (over the time-range from 1 d to 50 y).

[(a)] PLEIADES uses the rules for determining which tissues constitute the "remainder" that are defined by ICRP in Publications 60 and 68 (ICRP 1991; 1994b) – see also "Appendix A: Technical Basis". Remainder tissues are only defined for the 50-y integration period of committed dose.

2. IMBA Expert™ OCAS/ORAU-Edition's implementations of ICRP's currently recommended models of the human respiratory tract (HRTM) and gastro-intestinal tract are accurate, as is implementation of ICRP's currently recommended values of the gut uptake fraction, f_1.
3. IMBA Expert™ OCAS/ORAU-Edition's implementation of ICRP's currently used radionuclide and specific effective energy (SEE) data is adequate for dose calculation purposes.
4. The algorithms in NRPB's **IMBA** module (IMBA_DIS.exe) for calculating the number of radioactive disintegrations in ALL source organs (over the time range from 1 d to 50 y) resulting from **acute** intake are implemented correctly.
5. IMBA Expert™ OCAS/ORAU-Edition implements correctly ICRP's currently recommended radiation and tissue weighting factors.
6. IMBA Expert™ OCAS/ORAU-Edition implements correctly ICRP's currently recommended "remainder tissue rules" and also the current rules for "splitting" the "remainder" weighting factor between a single (most highly irradiated) tissue and the other constituent tissues of the "remainder".

C.1.3. Exceptions for Progeny with Different Kinetics from the Parent

For all benchmark comparisons with dose coefficients calculated by **PLEIADES**, IMBA Expert™ OCAS/ORAU-Edition was set up to emulate the conditions of the **PLEIADES** calculations as closely as possible. However, for some radionuclides with progeny chains, ICRP (and **PLEIADES**) use biokinetic models that are specific for each progeny element, and thus different from the biokinetics of the parent radionuclide; so-called "independent" kinetics. In such cases, HPA-RPD's **IMBA** module (IMBA_DIS.exe) currently cannot emulate independent kinetics. In nearly all cases, IMBA Expert™ OCAS/ORAU-Edition assumes so-called "shared" kinetics for the progeny, *i.e.*, that the same biokinetic model applies to radioactive progeny produced in body organs and tissues as applies to the parent radionuclide. However, there is one exception: the effect of independent kinetics has been approximated in IMBA Expert™ OCAS/ORAU-Edition for intakes of ^{226}Ra (**Appendix A: Technical Basis**, Section A.7.8.3.3).

ICRP assumes independent kinetics for the progeny associated with intakes of all radioisotopes of tellurium, lead, radium, thorium, and uranium. For the progeny produced by all other radionuclides, ICRP assumes "shared" kinetics, *i.e.*, the same assumption as IMBA Expert™ OCAS/ORAU-Edition. The parent radionuclides implemented in IMBA Expert™ OCAS/ORAU-Edition Version 4.0 for which ICRP assumes "independent" progeny kinetics are:

- **^{210}Pb;**
- **^{223},** ^{224}, ^{226}, ^{228}**Ra;**
- **^{131}, ^{131m}Te;**
- ^{228}, ^{230}, ^{232}, **^{234}Th;**
- **^{232}**, ^{234}, ^{235}, ^{236}, ^{238}**U**.

However, for ^{234}U and ^{236}U, the assumption of "shared" kinetics rather than "independent" kinetics is immaterial, since the first progeny of these uranium isotopes have such long radioactive half-life that their "in-growth" is negligible for dosimetry purposes. In the case of ^{230}Th also, "in-growth" of the first progeny ^{226}Ra can be neglected for dosimetry purposes, and thus has no practical effect on calculated doses (as discussed in Section C.8).

[(a)] Term used in ICRP Publication 30 (ICRP 1979) to describe non-recycling systems of compartments.
[(b)] Term used in ICRP Publication 67 (ICRP 1993) *et seq* to describe recycling systems of compartments.

C.1.4. Quality Assurance of Special OCAS/ORAU-Edition Features

IMBA Expert™ OCAS/ORAU-Edition provides the following special facilities for dose calculations that are beyond the scope of ICRP's reference publications, and are thus not implemented in HPA-RPD's **PLEIADES** code:

- Dose calculations for multiple intakes.
- Dose calculations for truncated chronic intakes.
- Dose calculations for associated radionuclides.
- Implementation of all variable parameters in the HRTM (for particulate materials).
- Calculation of doses received each year.

Quality assurance for each of these special features was established by extrapolation from the benchmark comparisons of dose coefficients. The methods used to quality assure each of these additional functions of IMBA Expert™ OCAS/ORAU-Edition are described in Sections C.4 through C.7, and C.11 (for the 'doses received each year').

C.2. Benchmark Comparisons of Committed Doses

For practical implementation, ICRP has published its recommended dose coefficients to two significant figures. While these are adequate for regulatory purposes, they are not adequate to quality assure all aspects of complex calculations by independent software (such as IMBA Expert™ OCAS/ORAU-Edition). To overcome this limitation, the standard output format for the **PLEIADES** code was revised to provide calculated doses to four significant figures, including doses integrated over intermediate time steps (from 1 d to 50 y after various acute intakes). The resulting "benchmark" comparisons with the corresponding values calculated by IMBA Expert™ OCAS/ORAU-Edition provided a highly sensitive tool to detect errors, however small, in IMBA Expert™ OCAS/ORAU-Edition's and/or HPA-RPD's **IMBA** modules' implementation of the currently recommended ICRP models and parameter values. This procedure was also beneficial in detecting any deficiencies or inconsistencies in ICRP's own implementation of their recommended models. Such deficiencies were inconsequential in regards to regulatory dose coefficients, but required correction in order to satisfy the rigorous criteria for accuracy set for the IMBA Expert™ OCAS/ORAU-Edition software (Section C.1.1). In essence, the benchmark comparisons carried out to validate the IMBA Expert™ OCAS/ORAU-Edition code have provided an independent test of ICRP's own calculations and database implementation.

For each of the 112 parent radionuclides incorporated in Version 4.0, committed doses were calculated by both IMBA Expert™ OCAS/ORAU-Edition and **PLEIADES** under the following range of conditions:

- For acute inhalation, with a comprehensive range of absorption types (and f_1 values) for the parent radionuclide concerned;
- For ICRP's default aerosol conditions (AMAD = 5 μm, σ_g = 2.4977233, ρ = 3 g cm^{-3}, SF = 1.5), and for the Reference Worker;
- For acute ingestion, with a comprehensive range of f_1 values;
- Excluding nuclear recoil energy from the SEEs for α emissions (for consistency with the dose coefficients published for the Reference Worker by ICRP and IAEA).

Section C.2 considers effective doses and committed organ doses (integrated over 50 y). A complete listing of all calculated dose coefficients (committed doses per unit intake), by radionuclide, is provided later in Sections C.10.1 through C.10.112 (for actinium-227 through zirconium-95). For convenience, overall summaries of these detailed results are given in the next sections (C.2.1 through C.2.3). These sections summarize, respectively, the maximum

differences found between values of dose coefficients (50 y committed doses per unit intake) calculated by IMBA Expert™ OCAS/ORAU-Edition and **PLEIADES**, for (i) effective dose, (ii) "remainder" tissues, and (iii) equivalent dose to individual organs. Any instance in which the criteria for accuracy of IMBA Expert™ OCAS/ORAU-Edition's calculated values are not satisfied is indicated by a footnote, giving the reason for the discrepancy.

Section C.3 summarizes the results of the benchmark comparison of doses calculated by IMBA Expert™ OCAS/ORAU-Edition and **PLEIADES** for integration periods between 1 d and 50 y. A complete listing of the doses per unit intake calculated for all tissues is available to registered Users of IMBA Expert™ OCAS/ORAU-Edition on CD-ROM (through www.imbaexpertsupport.com).

Section C.8 discusses the special case of ^{230}Th, for which it is appropriate in IMBA Expert™ OCAS/ORAU-Edition calculations to ignore the "in-growth" of the initial progeny ^{226}Ra (and its subsequent short-lived progeny).

Section C.9 discusses special cases (such as ^{235}U and ^{238}U), where for practical purposes it is appropriate for IMBA Expert™ OCAS/ORAU-Edition calculations to "merge" radioactive disintegrations of short-lived progeny with disintegrations of the parent.

C.2.1. Summary of Effective Dose Benchmarks

Table C.2.1 lists (by radionuclide) the maximum difference between values of committed effective dose per unit intake calculated by IMBA Expert™ OCAS/ORAU-Edition and **PLEIADES** (ICRP).

Table C.2.1. Maximum difference between effective doses per unit intake calculated by IMBA Expert™ OCAS/ORAU-Edition and PLEIADES.

No.	Radionuclide	Maximum Difference (%)	Intake Scenario[(a)]
1	^{227}Ac	-0.07	Inhalation – type "S"
2	^{228}Ac	-0.16	Inhalation – type "S"
3	^{110m}Ag	+0.07	Ingestion
4	^{241}Am	+0.19	Ingestion
5	^{243}Am	-0.05	Inhalation
6	^{74}As	-0.19	Inhalation
7	^{133}Ba	+0.02	Ingestion
8	^{140}Ba	+0.03	Inhalation
9	^{249}Bk	-0.59	Inhalation – type "M"
10	^{14}C	+0.86	Ingestion (organic particulate)
11	**^{45}Ca**	**-7.24**[(b)]	Ingestion
12	^{139}Ce	-0.29	Inhalation – type "S"
13	^{141}Ce	-0.33	Inhalation – type "S"
14	^{143}Ce	-0.14	Inhalation – types "M"/"S"
15	^{144}Ce	-0.16	Inhalation – type "S"
16	^{249}Cf	-0.18	Inhalation – type "M"
17	^{252}Cf	-0.28	Inhalation – type "M"
18	^{36}Cl	-0.26	Inhalation – type "M"
19	^{242}Cm	-0.22	Inhalation

[(a)] The absorption type/f_1 value is shown only when more than one absorption type (for inhalation) or f_1 value (for ingestion) was tested.
[(b)] IMBA assumes ICRP's currently recommended biokinetic model for calcium, whereas **PLEIADES** (and ICRP Publication 68; ICRP 1994b) assume ICRP Publication 10's metabolic model (ICRP 1968).

Table C.2.1. (Contd.).

No.	Radionuclide	Maximum Difference (%)	Intake Scenario
20	^{243}Cm	-0.12	Inhalation
21	^{244}Cm	-0.21	Inhalation
22	^{57}Co	-0.14	Inhalation – type “M”
23	^{58}Co	-0.17	Inhalation – type “S”
24	^{60}Co	-0.14	Inhalation – type “M”
25	^{51}Cr	+0.03	Inhalation – type “F”/Ingestion – f_1 = 0.01
26	^{134}Cs	-0.04	Ingestion
27	^{137}Cs	-0.04	Ingestion
28	^{152}Eu	-0.03	Inhalation
29	^{154}Eu	-0.08	Inhalation
30	^{155}Eu	-0.09	Inhalation
31	^{156}Eu	-0.20	Inhalation
32	^{55}Fe	+0.03	Inhalation – type “F”
33	^{59}Fe	-0.20	Inhalation – type “M”
34A	^{3}H	0.00	Injection/Ingestion (organic particulate)
34B	^{3}H	+0.01	Injection (inorganic particulate)
35	^{181}Hf	-0.28	Inhalation – type “M”
36A	^{203}Hg	-0.32	Inhalation – type “M” (inorganic)
36B	^{203}Hg	+0.05	Ingestion – f_1 = 0.4 (organic)
37	^{125}I	+0.02	Inhalation (particulate)
38	^{129}I	-0.04	Ingestion (particulate)
39	^{131}I	+0.02	Inhalation (particulate)
40	^{133}I	+0.01	Inhalation/Ingestion (particulate)
41	^{134}I	+0.03	Ingestion (particulate)
42	^{135}I	0.00	Inhalation/Ingestion (particulate)
43	^{192}Ir	-0.28	Inhalation – type “S”
44	^{140}La	-0.04	Inhalation – type “M”
45	^{174}Lu	-0.14	Inhalation – type “S”
46	^{54}Mn	+0.02	Inhalation – type “F”
47	^{99}Mo	-0.17	Inhalation – type “S”
58	^{22}Na	±0.01	Inhalation/Ingestion
49	^{24}Na	+0.01	Inhalation/Ingestion
50	^{94}Nb	-0.17	Inhalation – type “M”
51	^{95}Nb	-0.19	Inhalation – type “S”
52	^{63}Ni	+0.14	Inhalation – type “F”
53	^{237}Np	-0.02	Ingestion
54	^{239}Np	-0.19	Inhalation
55	^{32}P	-0.17	Inhalation – type “M”
56	^{33}P	+0.32	Ingestion
57	^{231}Pa	-0.18	Inhalation – type “M”/Ingestion
58	^{233}Pa	-0.29	Inhalation – types “M”/”S”
59	^{234}Pa	-0.09	Inhalation – types “M”/”S”
60	**^{210}Pb**	**+36.21**[(a)]	Ingestion
61	^{147}Pm	-0.24	Inhalation – type “S”
62	^{208}Po	-0.15	Inhalation – type “M”
63	^{209}Po	-0.12	Inhalation – type “M”
64	^{210}Po	-0.14	Inhalation – type “M”
65	^{143}Pr	-0.28	Inhalation – type “S”
66	^{147}Pr	-0.09	Inhalation – type “M”
67	^{238}Pu	-0.07	Inhalation – type “S”
68	^{239}Pu	-0.06	Inhalation – type “S”

[(a)] **PLEIADES** and ICRP Publication 68 (ICRP 1994b) assume independent progeny kinetics.

Table C.2.1. (Contd.).

No.	Radionuclide	Maximum Difference (%)	Intake Scenario
69	^{240}Pu	-0.06	Inhalation – type "S"
70	^{241}Pu	-0.60	Inhalation – type "M"
71	^{242}Pu	-0.05	Inhalation – type "S"
72	**^{223}Ra**	**+2.37**[(a)]	Ingestion
73	**^{224}Ra**	**-3.59**[(b)]	Ingestion
74	**^{226}Ra**	**-1.49**[(c)]	Ingestion
75	**^{228}Ra**	**-32**[(d)]	Inhalation
76	^{103}Ru	-0.22	Inhalation – types "M"/"S"
77	^{106}Ru	-0.13	Inhalation – type "M"
78A	^{35}S	-0.01	Ingestion (organic particulate)
78B	^{35}S	-0.31	Inhalation – type "M" (inorganic particulate)
79	^{124}Sb	-0.21	Inhalation – type "M"
80	^{125}Sb	-0.21	Inhalation – type "M"
81	^{46}Sc	-0.23	Inhalation – type "S"
82	^{151}Sm	+0.03	Ingestion
83	^{113}Sn	-0.23	Inhalation – type "M"
84	^{85}Sr	-0.05	Inhalation – type "S"
85	^{89}Sr	-0.20	Inhalation – type "S"
86	^{90}Sr	-0.10	Inhalation – type "S"
87	^{91}Sr	-0.09	Inhalation – type "S"
88	^{182}Ta	-0.26	Inhalation – type 'M"
89	^{160}Tb	-0.24	Inhalation
90	^{99}Tc	-0.31	Inhalation – type "M"
91	**^{131}Te**	**-52**[(e)]	Vapor – f_1 = 0.3
92	**^{131m}Te**	**-78**[(f)]	Vapor – f_1 = 0.3
93	**^{228}Th**	**+94**[(g)]	Ingestion
94	**^{230}Th**	**+4.8**[(h,i)]	Ingestion

[(a)] IMBA's assumption of "shared" kinetics, for ^{211}Pb, ^{211}Bi, and ^{207}Tl leads to marginally higher calculated effective doses.

[(b)] IMBA's assumption of "shared" kinetics, for ^{212}Pb and ^{212}Bi, leads to marginally lower calculated effective doses.

[(c)] PLEIADES (and ICRP) assume "independent" kinetics, including substantial loss of the first progeny, ^{222}Rn (radon gas) from tissues. IMBA attempts to emulate this behavior by modifying the progeny SEE data (see **Appendix A: Technical Basis**, Section A.7.8.3.3).

[(d)] IMBA's assumption of "shared" kinetics, for ^{224}Ra, ^{212}Pb and ^{212}Po, leads to substantially lower doses calculated by IMBA. The biokinetic behavior of ^{228}Th is markedly different from that of the parent ^{228}Ra.

[(e)] IMBA's assumption of "shared" kinetics, for ^{131}I, leads to substantially lower doses calculated by IMBA. The biokinetic behavior of ^{131}I is markedly different from that of the parent ^{131}Te.

[(f)] IMBA's assumption of "shared" kinetics, for ^{131}I, leads to substantially lower doses calculated by IMBA. The biokinetic behavior of ^{131}I is markedly different from that of the parent ^{131m}Te.

[(g)] IMBA's assumption of "shared" kinetics, for ^{224}Ra, ^{212}Pb and ^{212}Po, leads to substantially higher doses calculated by IMBA. The biokinetic behavior of ^{224}Ra is markedly different from that of the parent ^{228}Th.

[(h)] IMBA's assumption of "shared" kinetics, for ^{226}Ra, ^{222}Rn, ^{210}Pb and ^{210}Po, leads to marginally higher doses calculated by IMBA. The biokinetic behavior of ^{226}Ra is markedly different from that of the parent ^{230}Th, although its effect is limited by relatively little "in-growth".

[(i)] However, for all intakes of ^{230}Th, an accurate emulation of the doses calculated by **PLEIADES** (ICRP) is obtained simply by using the "Speed" option in IMBA™ Expert OCAS/ORAU-Edition – see **Appendix A: Technical Basis** (Section A.8.3.2.1). With this option, "in-growth" of the progeny radionuclide ^{226}Ra is ignored. Since, according to ICRP methodology, the doses contributed by "in-grown" ^{226}Ra are negligible, using the "Speed" option for ^{230}Th avoids the overestimation of ICRP-recommended dose coefficients that results from the default "Super-merge" calculation.

Table C.2.1. (Contd.).

No.	Radionuclide	Maximum Difference (%)	Intake Scenario
95	**^{232}Th**	**+436**[(a)]	Ingestion
96	^{234}Th	-0.18	Inhalation – type "S"
97	**^{201}Tl**	+0.05	Ingestion – f_1 = 0.99
98	**^{202}Tl**	+0.02	Inhalation/ingestion
99	**^{204}Tl**	+0.13	Ingestion
100	^{170}Tm	-0.24	Inhalation – type "M"
101	**^{232}U**	**-24**[(b)]	Inhalation – type "F"
102	^{234}U	-0.16	Inhalation – type "F"
103	^{235}U	-0.50	Inhalation – type "F"
104	^{236}U	-0.17	Inhalation – type "F"
105	^{238}U	-0.58	Inhalation – type "F"
106	^{239}U	-0.11	Inhalation – types "M"/"S"
107	^{88}Y	-0.08	Inhalation – type "S"
108	^{90}Y	-0.09	Inhalation – type "M"
109	^{91}Y	-0.19	Inhalation – type "S"
110	^{169}Yb	-0.27	Inhalation – type "S"
111	^{65}Zn	-0.04	Inhalation
112	^{95}Zr	-0.29	Inhalation – type "S"

Overall summary of Table C.2.1.

- For 100 of the 112 parent radionuclides implemented in Version 4.0, the effective dose from acute intake calculated by IMBA Expert™ OCAS/ORAU-Edition satisfies the < ±1% criterion for accuracy in comparison with the value calculated by **PLEIADES** (and tabulated in ICRP Publication 68; ICRP 1994b).

- This criterion is not satisfied for any of the implemented isotopes of tellurium, lead, radium or thorium, or for ^{232}U. For these parent radionuclides, ICRP's standard assumption of independent progeny kinetics can yield significantly different calculated effective doses from those calculated by IMBA Expert™ OCAS/ORAU-Edition. This is because **IMBA** is currently specified to assume that all progeny "share" the kinetics of the parent element.

- For ^{45}Ca, IMBA assumes ICRP's currently recommended biokinetic model for calcium, as per Federal Guidance Report No. 13 (USEPA 1999), whereas **PLEIADES** (and ICRP Publication 68; ICRP 1994b) assume ICRP Publication 10's metabolic model (ICRP 1968).

- For inhaled ^{224}Ra, with its very short-lived progeny thoron gas (^{220}Rn) and subsequent "in-growing" thoron gas progeny, the effective dose calculated by IMBA Expert™ OCAS/ORAU-Edition is within 1% of the value calculated by **PLEIADES** (ICRP). However, for ingested ^{224}Ra, the effective dose calculated by IMBA Expert™ OCAS/ORAU-Edition is *high* by approximately 4%.

[(a)] IMBA's assumption of "shared" kinetics, for ^{228}Ra, ^{224}Ra, ^{212}Pb and ^{212}Bi, leads to much higher doses calculated by IMBA. The biokinetic behavior of ^{228}Ra and ^{224}Ra is markedly different from that of the parent ^{232}Th.

[(b)] IMBA's assumption of "shared" kinetics, for ^{228}Th, ^{224}Ra, ^{212}Pb ^{212}Bi and ^{208}Tl, leads to lower doses calculated by IMBA. The biokinetic behavior of ^{228}Th is markedly different from that of the parent ^{232}U.

- For ^{226}Ra, with its "in-growing" radon gas (^{222}Rn) and short-lived progeny, the difference between the effective doses calculated by IMBA Expert™ OCAS/ORAU-Edition and **PLEIADES** (ICRP) is about -1.5% (for both inhalation and ingestion).

- For the β-emitting radionuclide ^{228}Ra (both inhaled and ingested), the effective doses calculated by IMBA Expert™ OCAS/ORAU-Edition are about 30% *lower* than the values calculated by **PLEIADES** (ICRP). For this parent radionuclide, **IMBA**'s assumption that the kinetics of the progeny radionuclide ^{228}Th in systemic organs are the same as the parent radium isotope has a substantial effect in reducing the calculated doses.

- For ingested ^{228}Th, the effective doses calculated by IMBA Expert™ OCAS/ORAU-Edition are almost two-fold *higher* than the values calculated by **PLEIADES** (ICRP). This is because **IMBA** assumes that the progeny radionuclide ^{224}Ra behaves like thorium in systemic organs. For inhalation this assumption has a lesser effect on the calculated effective dose, but the degree of "overestimate" is still substantial.

- For ingestion of ^{230}Th, and inhalation of moderately soluble forms, the effective doses calculated by IMBA Expert™ OCAS/ORAU-Edition are approximately 5% *higher* than the values calculated by **PLEIADES** (ICRP). For inhalation of insoluble (type "S") ^{230}Th, the calculated effective dose is about 2% *higher*. Again, the higher doses calculated by **PLEIADES** (ICRP) result from different treatment of the "in-grown" progeny radionuclide ^{226}Ra.[(a)]

- For ingestion of ^{232}Th, and inhalation of moderately soluble forms, the effective doses calculated by IMBA Expert™ OCAS/ORAU-Edition are approximately *five-fold higher* than the values calculated by **PLEIADES** (ICRP). For inhalation of insoluble (type "S") ^{228}Th, the calculated effective dose is about *two-fold higher*. In these cases, **IMBA**'s assumption that the progeny radionuclide ^{228}Ra follows *thorium* biokinetics has a dominant effect on the calculated doses, particularly for the bone surface and red bone marrow.

Important Note #1: For intakes of ^{228}Ra, ^{228}Th or ^{232}Th, use of the effective doses calculated by IMBA Expert™ OCAS/ORAU-Edition is **NOT RECOMMENDED FOR REGULATORY PURPOSES.**

Important Note #2: For ALL cases tested where **PLEIADES** could be set up to assume the same kinetics for progeny radionuclides as for the parent ("shared" kinetics), the calculated effective doses agreed with those calculated by **IMBA** to within the accuracy criterion (±1%). A listing of the doses per unit intake calculated by **PLEIADES** for "shared" progeny kinetics is available to registered Users of IMBA Expert™ OCAS/ORAU-Edition on CD-ROM (through www.imbaexpertsupport.com).

[(a)] Note again, however, that for all intakes of ^{230}Th, an accurate emulation of the doses calculated by PLEIADES (ICRP) is obtained simply by using the "Speed" option in IMBA Expert™ OCAS/ORAU-Edition – see Appendix A: Technical Basis (Section A.8.3.2.1). With this option, "in-growth" of the progeny radionuclide ^{226}Ra is ignored. Since, according to ICRP methodology, the doses contributed by "in-grown" ^{226}Ra are negligible, using the "Speed" option for ^{230}Th avoids the overestimation of ICRP-recommended dose coefficients that results from the default "Super-merge" calculation.

C.2.2. Summary of Individual Organ/Tissue Dose Benchmarks

Table C.2.2 lists (by radionuclide) the maximum difference between values of the 50-y committed equivalent dose per unit intake calculated for individual organs and tissues by IMBA Expert™ OCAS/ORAU-Edition and **PLEIADES** (ICRP Publication 68; ICRP 1994b)).

Table C.2.2. Maximum difference between committed equivalent doses per unit intake calculated for any individual organ or tissue by IMBA Expert™ OCAS/ORAU-Edition and PLEIADES.

No.	Radionuclide	Maximum Difference (%)	Intake Scenario/Individual Organ(s) or Tissue(s)
1	^{227}Ac	-0.44	Inhalation – type "S"/Lungs
2	^{228}Ac	-0.59	Inhalation – type "M"/Lungs
3	^{110m}Ag	+0.16	Ingestion – Colon
4	^{241}Am	+0.21	Ingestion – Spleen
5	^{243}Am	+0.21	Ingestion – Muscle
6	^{74}As	-0.37	Inhalation – Lungs
7	^{133}Ba	-0.13	Ingestion – Lungs
8	^{140}Ba	-0.12	Inhalation – Lungs
9	^{249}Bk	-0.74	Ingestion – Testes
10	^{14}C	+0.89	Ingestion (organic particulate)
11	**^{45}Ca**	**-28**[(a)]	Ingestion – Lungs
12	^{139}Ce	-0.36	Inhalation – type "S"/Lungs
13	^{141}Ce	-0.37	Inhalation – type "S"/Lungs
14	^{143}Ce	-0.36	Inhalation – type "M"/Lungs
15	^{144}Ce	-0.18	Inhalation – type "S"/Lungs
16	^{249}Cf	-0.22	Inhalation – type "M"/Lungs
17	^{252}Cf	-0.81	Inhalation – type "M"/Thoracic Lymph Nodes (LN_{TH})
18	^{36}Cl	-0.28	Inhalation – type "M"/Lungs
19	^{242}Cm	-0.26	Inhalation – Lungs
20	^{243}Cm	+0.23	Inhalation – Lungs
21	^{244}Cm	-0.26	Inhalation/Bone Surface – Ingestion/Lungs
22	^{57}Co	-0.26	Inhalation – type "M"/Lungs
23	^{58}Co	-0.26	Inhalation – type "S"/Lungs
24	^{60}Co	-0.26	Inhalation – type "M"/Lungs
25	^{51}Cr	-0.09	Inhalation – types "M"/"S"/Lungs
26	^{134}Cs	-0.12	Ingestion – Lungs
27	^{137}Cs	-0.11	Inhalation – Lungs
28	^{152}Eu	-0.21	Inhalation – Lungs
29	^{154}Eu	-0.25	Inhalation – Lungs
30	^{155}Eu	-0.25	Inhalation – Lungs
31	^{156}Eu	-0.32	Inhalation – Lungs
32	**^{55}Fe**	**-1.37**[(b)]	Inhalation – type "F"/Lower Large Intestine (LLI)
33	^{59}Fe	-0.31	Inhalation – type "M"/Lungs
34A	^{3}H	-0.11	Ingestion – Lungs (organic particulate)
34B	^{3}H	-0.10	Injection – Lungs (inorganic particulate)
35	^{181}Hf	-0.34	Inhalation – type "M"/Lungs
36A	^{203}Hg	-0.36	Inhalation – Lungs (inorganic)

[(a)] For ^{45}Ca, there is a substantial difference for all body organs (except for the lungs as a result of inhalation, where the difference is < 1%). This is because IMBA assumes ICRP's currently recommended biokinetic model for calcium, whereas **PLEIADES** (and ICRP Publication 68; ICRP 1994b) assume ICRP Publication 10's metabolic model (ICRP 1968).

[(b)] The > 1% difference for LLI (inhalation of ^{55}Fe) results from an "error" in the excretion pathway in ICRP's implementation – and not in IMBA Expert™ OCAS-Edition. The difference is < 1% when the correct excretion pathway is implemented in **PLEIADES**.

Table C.2.2. (Contd.).

No.	Radionuclide	Maximum Difference (%)	Intake Scenario/Individual Organ(s) or Tissue(s)
36B	^{203}Hg	+0.11	Ingestion – Breast (organic)
37	^{125}I	+0.11	Inhalation – Kidneys (particulate)
38	^{129}I	+0.14	Ingestion – Kidneys/Testes (particulate)
39	^{131}I	-0.19	Inhalation – Lungs (particulate)
40	^{133}I	-0.25	Inhalation – Lungs (particulate)
41	^{134}I	-0.30	Inhalation – Lungs (particulate)
42	^{135}I	-0.24	Inhalation – Lungs (particulate)
43	^{192}Ir	-0.33	Inhalation – type "S"/Lungs
44	^{140}La	-0.31	Inhalation – type "M"/Lungs
45	^{174}Lu	-0.25	Inhalation – type "M"/Lungs
46	^{54}Mn	-0.12	Inhalation – type "M"/Lungs
47	^{99}Mo	-0.33	Inhalation – type "S"/Lungs
48	^{22}Na	-0.14	Inhalation – Lungs
49	^{24}Na	-0.14	Inhalation – Lungs
50	^{94}Nb	-0.27	Inhalation – type "M"/Lungs
51	^{95}Nb	-0.27	Inhalation – type "S"/Lungs
52	^{63}Ni	+0.17	Ingestion – Stomach
53	^{237}Np	+0.16	Ingestion – Numerous
54	^{239}Np	-0.37	Inhalation – Lungs
55	^{32}P	-0.31	Inhalation – type "M"/Lungs
56	^{33}P	+0.64	Inhalation – type "M"/Thoracic Lymph Nodes (LN_{TH})
57	^{231}Pa	-0.26	Ingestion – Lungs
58	^{233}Pa	-0.36	Inhalation – type "M"/Lungs
59	^{234}Pa	-0.31	Inhalation – type "M"/Lungs
60	**^{210}Pb**	**+190[(a)]**	Ingestion/Skin
61	^{147}Pm	-0.34	Inhalation – type "M"/Lungs
62	^{208}Po	+0.15	Ingestion – Numerous
63	^{209}Po	+0.16	Inhalation – type "M"/ Upper Large Intestine (ULI)
64	^{210}Po	+0.16	Ingestion – Urinary Bladder
65	^{143}Pr	-0.39	Inhalation – type "M"/Lungs
66	^{147}Pr	-0.38	Inhalation – type "M"/Lungs
67	^{238}Pu	+0.18	Ingestion – Remainder
68	^{239}Pu	+0.18	Inhalation – type "S"/ Upper Large Intestine (ULI)
69	^{240}Pu	+0.18	Ingestion – Numerous
70	^{241}Pu	-0.75	Inhalation – type "S"/Thoracic Lymph Nodes (LN_{TH})
71	^{242}Pu	+0.18	Ingestion – Numerous
72	**^{223}Ra**	**-32[(b)]**	Ingestion – Kidneys

[(a)] **PLEIADES** and ICRP Publication 68 (ICRP 1994b) assume independent progeny kinetics.
[(b)] IMBA's assumption of "shared" kinetics, for ^{211}Pb, ^{211}Bi, and ^{207}Tl leads to marginally lower equivalent doses calculated by IMBA for soft tissues, especially the kidneys.

Table C.2.2. (Contd.).

No.	Radionuclide	Maximum Difference (%)	Intake Scenario/Individual Organ(s) or Tissue(s)
73	**^{224}Ra**	**-81**[(a)]	Ingestion – Kidneys
74	**^{226}Ra**	**-35**[(b)]	Ingestion – Kidneys
75	**^{228}Ra**	**-95**[(c)]	Inhalation – Liver
76	^{103}Ru	-0.27	Inhalation – type "S"/Lungs
77	^{106}Ru	-0.14	Inhalation – type "M"/Lungs
78A	^{35}S	-0.10	Ingestion – Lungs (organic particulate)
78B	^{35}S	-0.30	Inhalation – type "M"/Lungs (inorganic particulate)
79	^{124}Sb	-0.31	Inhalation – type "M"/Lungs
80	^{125}Sb	-0.30	Inhalation – type "M"/Lungs
81	^{46}Sc	-0.29	Inhalation – type "S"/Lungs
82	^{151}Sm	-0.08	Ingestion – Lungs
83	^{113}Sn	-0.26	Inhalation – type "M"/Lungs
84	^{85}Sr	-0.12	Inhalation – type "S"/Lungs
85	^{89}Sr	-0.24	Inhalation – type "S"/Lungs
86	^{90}Sr	+0.16	Inhalation – type "S"/Various Soft Tissues
87	^{91}Sr	-0.34	Inhalation – type "S"/Lungs
88	^{182}Ta	-0.33	Inhalation – type "M"/Lungs
89	^{160}Tb	-0.32	Inhalation – Lungs
90	^{99}Tc	-0.36	Inhalation – type "M"/Lungs
91	**^{131}Te**	**+1095**[(d)]	Vapor/Ingestion – Bone Surface
92	**^{131m}Te**	**+141**[(e)]	Ingestion – Bone Surface
93	**^{228}Th**	**+147**[(f)]	Inhalation – type "M"/Bone Surface
94	**^{230}Th**	**+6.4**[(g)]	Inhalation – type "S"/Various Soft Tissues

[(a)] IMBA assumes "shared" kinetics for ^{212}Pb and ^{212}Bi, leading to substantially lower equivalent doses calculated by IMBA for soft tissues, especially the kidneys.

[(b)] **PLEIADES** (and ICRP Publication 68; ICRP 1994b) assume "independent" progeny kinetics, including substantial loss of ^{222}Rn (gas) from tissues. IMBA attempts to emulate this behavior by modifying the progeny SEE data (see **Appendix A: Technical Basis**, Section A.7.8.3.3). However, IMBA's current "emulation" still gives substantially lower values of equivalent dose for various soft tissues, especially the kidneys.

[(c)] IMBA assumes "shared" kinetics for ^{228}Th, ^{212}Pb and ^{212}Bi, leading to substantially lower doses calculated by IMBA for all non-respiratory-tract tissues. The biokinetic behavior of the first progeny (^{228}Th) is markedly different from that of the parent ^{228}Ra.

[(d)] IMBA assumes "shared" kinetics for ^{131}Te and ^{131}I, leading to much higher doses calculated by IMBA for all non-respiratory-tract tissues, most markedly for the bone surface. The biokinetic behavior of ^{131}I is markedly different from that of the parent ^{131}Te.

[(e)] IMBA assumes "shared" kinetics for ^{131m}Te and ^{131}I, leading to substantially higher doses calculated by IMBA for all non-respiratory-tract tissues, especially the bone surface. The biokinetic behavior of ^{131}I is markedly different from that of the parent ^{131m}Te.

[(f)] IMBA assumes "shared" kinetics for ^{224}Ra, ^{212}Pb and ^{212}Bi, leading to substantially higher doses calculated by IMBA for the bone surface, red bone marrow, and gonads. The biokinetic behavior of ^{224}Ra is markedly different from that of the parent ^{228}Th.

[(g)] IMBA's assumption of "shared" kinetics, for ^{226}Ra, ^{222}Rn, ^{210}Pb and ^{210}Po, leads to marginally higher calculated doses. The biokinetic behavior of ^{226}Ra is markedly different from that of the parent ^{230}Th, although its effect is limited by relatively little "in-growth".

Table C.2.2. (Contd.).

No.	Radionuclide	Maximum Difference (%)	Intake Scenario/Individual Organ(s) or Tissue(s)
95	**^{232}Th**	**+529**[(a)]	Inhalation – type "S"/Bone Surface
96	**^{234}Th**	**+69**[(b)]	Inhalation – type "S"/Bone Surface
97	^{201}Tl	+0.11	Ingestion/Skin
98	^{202}Tl	+0.08	Inhalation/Lungs
99	^{204}Tl	+0.17	Ingestion/Numerous
100	^{170}Tm	-0.30	Inhalation – type "M"/Lungs
101	**^{232}U**	**-92**[(c)]	Inhalation – type "S"/Bone Surface
102	^{234}U	-0.28	Ingestion/Lungs
103	**^{235}U**	**-1.93**[(d)]	Inhalation – type "M"/Bone Surface
104	^{236}U	-0.28	Inhalation – type "F"/Lungs
105	**^{238}U**	**-2.03**[(e)]	Inhalation – type "M"/Bone Surface
106	^{239}U	+0.71	Inhalation – type "S"/Thoracic Lymph Nodes (LN_{TH})
107	^{88}Y	-0.16	Inhalation – type "S"/Lungs
108	^{90}Y	-0.30	Inhalation – type "M"/Lungs
109	^{91}Y	-0.26	Inhalation – type "M"/Lungs
110	^{169}Yb	-0.30	Inhalation – type "M"/Lungs
111	^{65}Zn	-0.13	Inhalation – Ingestion/Lungs
112	^{95}Zr	-0.35	Inhalation – type "S"/Lungs

Overall Summary of Table C.2.2.

- Except for isotopes of tellurium, radium and thorium, ^{232}U, ^{235}U, ^{238}U and ^{210}Pb, for all other radionuclides implemented in Version 4.0, the committed equivalent doses calculated by IMBA Expert™ OCAS/ORAU-Edition for all body organs or tissues (including "remainder" tissues) satisfy the < ±1% accuracy criterion in comparison with the corresponding values calculated by **PLEIADES** (and ICRP Publication 68; ICRP 1994b).

[(a)] IMBA's assumption of "shared" kinetics, for ^{228}Ra, ^{224}Ra, ^{212}Pb and ^{212}Bi, leads to very much higher calculated doses, especially for the bone surface, red bone marrow, and gonads. The biokinetic behavior of ^{228}Ra and ^{224}Ra is markedly different from that of the parent ^{232}Th.

[(b)] IMBA's assumption of "shared" kinetics, especially for ^{234}U, ^{226}Ra, leads to substantially higher calculated doses, especially for the bone surface, red bone marrow, and gonads. The biokinetic behavior of ^{234}U and ^{226}Ra is markedly different from that of the parent ^{234}Th.

[(c)] IMBA assumes "shared" kinetics for ^{228}Th, ^{224}Ra, ^{212}Pb, ^{212}Bi and ^{208}Tl. This leads to leads to substantially lower calculated doses, especially for the bone surface, red bone marrow, and gonads. The biokinetic behavior of ^{228}U and ^{224}Ra is markedly different from that of the parent ^{232}U.

[(d)] IMBA assumes "shared" kinetics for the "in-grown" short-lived ^{231}Th progeny (bone surface seeker). However, in IMBA Expert™ OCAS-Edition, "merging" ^{231}Th disintegrations with those of the parent effectively compensates for any underestimation of bone surface and other doses – see discussion of "merged" ^{231}Th progeny decays for practical applications (Section C.9).

[(e)] IMBA assumes "shared" kinetics for the "in-grown" short-lived ^{234}Th/^{234m}Pa/^{234}Pa progeny (bone surface seekers). However, in IMBA Expert™ OCAS/ORAU-Edition, "merging" the disintegrations of the short-lived progeny with those of the parent effectively compensates for any underestimation of bone surface and other doses (except for doses to parts of the GI tract) – see also discussion of "merged" ^{234}Th/^{234m}Pa/^{234}Pa progeny decays for practical applications (Section C.9).

- For ^{45}Ca, IMBA Expert™ OCAS/ORAU-Edition calculates substantially different for all body organs (except for the lungs as a result of inhalation, where the difference is < 1%). This is because IMBA assumes ICRP's currently recommended biokinetic model for calcium, whereas **PLEIADES** (and ICRP Publication 68; ICRP 1994b) assume ICRP Publication 10's metabolic model (ICRP 1968). The doses calculated by IMBA are appropriate (correct).

- For ^{210}Pb, IMBA Expert™ OCAS/ORAU-Edition calculates approximately *two-fold higher* doses than **PLEIADES** (ICRP Publication 68; ICRP 1994b).

- For ^{223}Ra, IMBA Expert™ OCAS/ORAU-Edition calculates *lower* doses for systemic organs/tissues than **PLEIADES** (ICRP Publication 68; ICRP 1994b), especially for the kidneys.

- For ^{224}Ra, IMBA Expert™ OCAS/ORAU-Edition calculates *lower* doses for systemic organs/tissues than **PLEIADES** (ICRP Publication 68; ICRP 1994b), especially for the kidneys.

- For ^{226}Ra, IMBA Expert™ OCAS/ORAU-Edition calculates *marginally lower* equivalent doses for non-respiratory-tract tissues than **PLEIADES** (ICRP Publication 68; ICRP 1994b), except for tissues of the GI tract, spleen, and kidneys, for which the IMBA Expert™ OCAS/ORAU-Edition values are *substantially lower*.

- For ^{228}Ra, IMBA Expert™ OCAS/ORAU-Edition calculates substantially *lower* equivalent doses for non-respiratory-tract tissues than **PLEIADES** (ICRP Publication 68; ICRP 1994b), especially for the liver, kidneys and gonads.

- For ^{131}Te, IMBA Expert™ OCAS/ORAU-Edition calculates substantially *higher* doses for many tissues than **PLEIADES** (ICRP Publication 68; ICRP 1994b), especially for the bone surface. However, the dose to the thyroid is *underestimated* by about *two orders of magnitude*.

- For ^{131m}Te, IMBA Expert™ OCAS/ORAU-Edition calculates substantially *higher* doses for many tissues than **PLEIADES** (ICRP Publication 68; ICRP 1994b), especially for the bone surface. However, the dose to the thyroid is *underestimated* about *fifty-fold*.

- For ^{228}Th, IMBA Expert™ OCAS/ORAU-Edition calculates equivalent doses for most non-respiratory-tract tissues that are *higher* than the values calculated by **PLEIADES** (ICRP) by about 20% for inhalation and 10% for ingestion. However, equivalent doses for the bone surface, red bone marrow and gonads are more than *two-fold higher* than the **PLEIADES** (ICRP Publication 68; ICRP 1994b) values.

- For both inhalation and ingestion of ^{230}Th, the equivalent doses calculated by IMBA Expert™ OCAS/ORAU-Edition for non-respiratory-tract tissues are generally about *5% higher* than the values calculated by **PLEIADES** (ICRP Publication 68; ICRP 1994b).

- For both inhalation and ingestion of ^{232}Th, the equivalent doses calculated by IMBA Expert™ OCAS/ORAU-Edition for non-respiratory-tract tissues are generally about *two-fold higher* than the values calculated by **PLEIADES** (ICRP Publication 68; ICRP 1994b). However, the doses calculated for the bone surface are about *six-fold higher*, and those calculated for the red bone marrow, liver and kidneys are *four-* to *six-fold higher*.

- For both inhalation and ingestion of ^{230}Th, the equivalent doses calculated by IMBA Expert™ OCAS/ORAU-Edition for non-respiratory-tract tissues are marginally *higher* than the values calculated by **PLEIADES** (ICRP Publication 68; ICRP 1994b). However, the doses calculated for the bone surface are up to *70% higher*.

	Important Note #1: For intakes of ^{224}Ra, ^{228}Ra, ^{228}Th or ^{232}Th, use of the equivalent doses calculated by IMBA Expert™ OCAS/ORAU-Edition for non-respiratory-tract tissues is **NOT RECOMMENDED FOR RISK ASSESSMENT OR EPIDEMIOLOGICAL PURPOSES.**
	Important Note #2: For ALL cases tested where **PLEIADES** could be set up to assume the same kinetics for progeny radionuclides as for the parent ("shared" kinetics), ALL calculated equivalent doses agreed with those calculated by **IMBA** to within the accuracy criterion (±1%). A listing of the doses per unit intake calculated by **PLEIADES** for "shared" progeny kinetics is available to registered Users of IMBA Expert OCAS/ORAU-Edition on CD-ROM (through www.imbaexpertsupport.com).
	Key Practical Note #1: For ^{235}U, use of the "Speed" option in IMBA Expert™ OCAS/ORAU-Edition provides an *accurate* emulation of tissue doses calculated by **PLEIADES** (and ICRP) for the practical situation where the intake includes an activity-equilibrium amount of the short-lived progeny radionuclide ^{231}Th – see Section C.9.
	Key Practical Note #2: For ^{238}U, use of the "Speed" option in IMBA Expert™ OCAS/ORAU-Edition again provides an *accurate* emulation of tissue doses calculated by **PLEIADES** (and ICRP) for the practical situation where the intake includes an activity-equilibrium amount of the short-lived progeny radionuclide ^{234}Th/^{234m}Pa/^{234m}Pa – except for equivalent doses calculated for parts of the GI tract (especially for ingestion of insoluble materials) – see Section C.9.

C.2.3. Summary of Non-Respiratory-Tract Dose Benchmarks

For the majority of radionuclides, Table C.2.2 showed that the maximum difference between dose coefficients calculated by IMBA Expert™ OCAS/ORAU-Edition and **PLEIADES** (ICRP Publication 68; ICRP 1994b) occurred for the lungs. Table C.2.3 lists (by radionuclide) the maximum differences for individual organs/tissues that are not part of the respiratory tract (and in some cases are for the "grouped" *remainder*).

Table C.2.3. Maximum difference between committed equivalent doses per unit intake calculated by IMBA Expert OCAS/ORAU-Edition and PLEIADES for individual organs or tissues excluding the respiratory tract.

No.	Radionuclide	Maximum Difference (%)	Intake Scenario[(a)]/Individual Organ(s) or Tissue(s)
1	^{227}Ac	+0.07	Ingestion – Colon
2	^{228}Ac	±0.06	Inhalation – type "M"/Ingestion – Remainder
3	^{110m}Ag	+0.16	Ingestion – Colon
4	^{241}Am	+0.21	Ingestion – Spleen
5	^{243}Am	+0.21	Ingestion – Muscle
6	^{74}As	+0.08	Ingestion – Brain

[(a)] The absorption type/f_1 value is shown only when more than one absorption type (for inhalation) or f_1 value (for ingestion) was tested.

Table C.2.3. (Contd.).

No.	Radionuclide	Maximum Difference (%)	Intake Scenario/ Individual Organ(s) or Tissue(s)
7	^{133}Ba	-0.08	Inhalation – Uterus
8	^{140}Ba	+0.05	Inhalation – Thymus/ Ingestion – Colon
9	^{249}Bk	-0.74	Ingestion – Testes
10	^{14}C	+0.89	Ingestion – Most Tissues (organic particulate)
11	**^{45}Ca**	**-28**[(a)]	Inhalation – Numerous
12	^{139}Ce	+0.09	Inhalation – type "S"/Remainder
13	^{141}Ce	+0.10	Inhalation – type "M"/Testes
14	^{143}Ce	±0.05	Inhalation/Ingestion – Several
15	^{144}Ce	+0.17	Inhalation – type "M"/Spleen
16	^{249}Cf	-0.21	Ingestion – Testes
17	^{252}Cf	-0.80	Ingestion – Liver
18	^{36}Cl	-0.03	Inhalation – type "M"/Kidneys
19	^{242}Cm	-0.13	Inhalation – Bone Surface
20	^{243}Cm	-0.11	Inhalation/Ingestion – Bone Surface
21	^{244}Cm	-0.26	Inhalation – Bone Surface
22	^{57}Co	+0.07	Ingestion – Brain
23	^{58}Co	+0.06	Inhalation – type "S"/Colon
24	^{60}Co	+0.05	Ingestion – Breast/Testes
25	^{51}Cr	+0.06	Ingestion – Colon
26	^{134}Cs	-0.05	Inhalation – Lower Large Intestine (LLI)
27	^{137}Cs	-0.04	Ingestion – Stomach/Small Intestine (SI)
28	^{152}Eu	-0.05	Inhalation – Colon
29	^{154}Eu	+0.05	Ingestion – Colon
30	^{155}Eu	-0.06	Ingestion – Remainder
31	^{156}Eu	-0.05	Inhalation – Liver
32	**^{55}Fe**	**-1.37**[(b)]	Inhalation – type "F"/Lower Large Intestine (LLI)
33	^{59}Fe	-0.06	Inhalation – type "F"/Lower Large Intestine (LLI)
34A	^{3}H	+0.01	Ingestion – Various Tissues (organic particulate)
34B	^{3}H	+0.01	Injection – Various Tissues (inorganic particulate)
35	^{181}Hf	-0.06	Ingestion – Remainder
36A	^{203}Hg	+0.10	Ingestion – Breast
36B	^{203}Hg	+0.11	Ingestion – Breast
37	^{125}I	+0.11	Inhalation – Kidneys (particulate)
38	^{129}I	+0.14	Ingestion – Kidneys/Testes (particulate)
39	^{131}I	±0.04	Inhalation/Ingestion – Testes/Colon (particulate)
40	^{133}I	+0.04	Ingestion – Colon (particulate)
41	^{134}I	+0.08	Ingestion – Thymus (particulate)
42	^{135}I	±0.02	Inhalation/Ingestion – Various Tissues (particulate)
43	^{192}Ir	+0.07	Inhalation/Ingestion – Several Tissues

[(a)] For ^{45}Ca, there is a substantial difference for all body organs (except for the lungs as a result of inhalation, where the difference is < 1%). This is because IMBA assumes ICRP's currently recommended biokinetic model for calcium, whereas **PLEIADES** (and ICRP Publication 68; ICRP 1994b) assume ICRP Publication 10's metabolic model (ICRP 1968).

[(b)] The >1% difference for LLI (inhalation of ^{55}Fe) results from an "error" in the excretion pathway in ICRP's implementation – and not in IMBA Expert™ OCAS/ORAU-Edition. The difference is < 1% when the correct excretion pathway is implemented in **PLEIADES**.

Table C.2.3. (Contd.).

No.	Radionuclide	Maximum Difference (%)	Intake Scenario/ Individual Organ(s) or Tissue(s)
44	^{140}La	+0.06	Inhalation – type "F"/Breast
45	^{174}Lu	+0.11	Inhalation – type "S"/Remainder
46	^{54}Mn	+0.04	Ingestion – Brain
47	^{99}Mo	+0.16	Ingestion – Brain
48	^{22}Na	+0.04	Inhalation/Uterus – Ingestion/Breast
49	^{24}Na	+0.06	Inhalation – Testes
50	^{94}Nb	+0.05	Inhalation – type "M"/Urinary Bladder
51	^{95}Nb	+0.06	Inhalation – type "M"/Colon
52	^{63}Ni	+0.17	Ingestion – Stomach
53	^{237}Np	+0.16	Ingestion – Various Soft Tissues
54	^{239}Np	-0.21	Inhalation – Bone Surface
55	^{32}P	+0.15	Inhalation – type "M"/Various Soft Tissues
56	^{33}P	+0.60	Inhalation – type "M"/Bone Surface
57	^{231}Pa	-0.20	Inhalation – type "M"/Red Bone Marrow
58	^{233}Pa	-0.32	Inhalation – type "S"/Bone Surface
59	^{234}Pa	-0.05	Ingestion – Remainder
60	**^{210}Pb**	**+190[(a)]**	Ingestion – Skin
61	^{147}Pm	+0.04	Inhalation/Colon – Ingestion/Skin/Colon
62	^{208}Po	+0.15	Ingestion – Numerous
63	^{209}Po	+0.16	Inhalation – type"F"/Upper Large Intestine (ULI)
64	^{210}Po	+0.16	Ingestion – Urinary Bladder
65	^{143}Pr	±0.06	Inhalation – Several
66	^{147}Pr	-0.09	Ingestion – Remainder
67	^{238}Pu	+0.18	Ingestion – Urinary Bladder
68	^{239}Pu	+0.18	Inhalation – type "M"/Stomach
69	^{240}Pu	+0.18	Ingestion – Various Soft Tissues
70	^{241}Pu	-0.64	Ingestion – Kidneys/Liver
71	^{242}Pu	+0.18	Ingestion – Various Soft Tissues
72	**^{223}Ra**	**-32[(b)]**	Ingestion – Kidneys
73	**^{224}Ra**	**-81[(c)]**	Ingestion – Kidneys
74	**^{226}Ra**	**-35[(d)]**	Inhalation/Ingestion – Kidneys
75	**^{228}Ra**	**+2,647[(e)]**	Inhalation – Remainder
76	^{103}Ru	+0.05	Ingestion – Colon
77	^{106}Ru	+0.05	Ingestion – Colon
78A	^{35}S	+0.01	Ingestion – Most Tissues (organic particulate)

[(a)] **PLEIADES** and ICRP Publication 68 (ICRP 1994b) assume independent progeny kinetics.

[(b)] IMBA's assumption of "shared" kinetics, for ^{211}Pb and ^{211}Bi, leads to substantially lower calculated equivalent doses for soft tissues, especially the kidneys.

[(c)] IMBA's assumption of "shared" kinetics, for ^{212}Pb and ^{212}Bi, leads to substantially lower calculated equivalent doses for soft tissues, especially the kidneys.

[(d)] PLEIADES (and ICRP) assume "independent" kinetics, including substantial loss of ^{222}Rn (gas) from tissues. IMBA attempts to emulate this behavior by modifying the progeny SEE data (see **Appendix A: Technical Basis**, Section A.7.8.3.3). However, IMBA's current "emulation" still gives substantially lower values of equivalent dose for various soft tissues, especially the kidneys.

[(e)] IMBA's assumption of "shared" kinetics, for ^{228}Th, ^{212}Pb and ^{212}Bi, leads to substantially lower calculated doses for all non-respiratory-tract tissues. The biokinetic behavior of ^{228}Th is markedly different from that of the parent ^{228}Ra.

Table C.2.3. (Contd.).

No.	Radionuclide	Maximum Difference (%)	Intake Scenario/ Individual Organ(s) or Tissue(s)
78B	^{35}S	+0.04	Ingestion – Small Intestine (SI) (inorganic particulate)
79	^{124}Sb	-0.05	Inhalation – Liver/Bone Surface
80	^{125}Sb	+0.07	Ingestion – Breast
81	^{46}Sc	+0.07	Inhalation – Remainder
82	^{151}Sm	-0.05	Ingestion – Remainder
83	^{113}Sn	+0.08	Ingestion – Breast
84	^{85}Sr	±0.03	Inhalation/Ingestion – Thyroid/Thymus/Skin
85	^{89}Sr	+0.16	Inhalation – Various Soft Tissues
86	^{90}Sr	+0.16	Inhalation – Various Soft Tissues
87	^{91}Sr	+0.07	Inhalation – Thyroid
88	^{182}Ta	+0.09	Inhalation – type "S"/Remainder
89	^{160}Tb	-0.08	Ingestion – Remainder
90	^{99}Tc	+0.09	Inhalation – type "M"/Various Soft Tissues
91	**^{131}Te**	**+3435[(a)]**	Vapor – Remainder
92	**^{131m}Te**	**+3946[(b)]**	Inhalation – type "F"/Remainder
93	**^{228}Th**	**+74,933[(c)]**	Inhalation – type "S"/Remainder
94	**^{230}Th**	**+6.4[(d)]**	Inhalation – type "S"/Various Soft Tissues
95	**^{232}Th**	**+529[(e)]**	Inhalation – type "S"/ Bone Surface
96	**^{234}Th**	**+70[(f)]**	Inhalation – type"S"/Bone Surface
97	^{201}Tl	+0.11	Ingestion – Skin
98	^{202}Tl	+0.05	Inhalation/Brain – Ingestion/Skin
99	^{204}Tl	+0.17	Inhalation/Ingestion – Numerous
100	^{170}Tm	+0.15	Ingestion – Various Soft Tissues
101	**^{232}U**	**-92[(g)]**	Inhalation – type"S"/Bone Surface
102	^{234}U	-0.24	Inhalation – type "M"/ Bone Surface

(a) IMBA assumes "shared" kinetics for ^{131}Te and ^{131}I, leading to much higher doses calculated by IMBA for all non-respiratory-tract tissues, most markedly for the bone surface. The biokinetic behavior of ^{131}I is markedly different from that of the parent ^{131}Te.

(b) IMBA assumes "shared" kinetics for ^{131m}Te and ^{131}I, leading to substantially higher doses calculated by IMBA for all non-respiratory-tract tissues, especially the bone surface. The biokinetic behavior of ^{131}I is markedly different from that of the parent ^{131m}Te.

(c) IMBA's assumption of "shared" kinetics for ^{224}Ra, ^{212}Pb and ^{212}Bi leads to substantially higher calculated doses for the bone surface, red bone marrow, and gonads. The biokinetic behavior of ^{224}Ra is markedly different from that of the parent ^{228}Th.

(d) IMBA's assumption of "shared" kinetics for ^{226}Ra, ^{222}Rn, ^{210}Pb and ^{210}Po leads to marginally higher calculated doses. The biokinetic behavior of ^{226}Ra is markedly different from that of the parent ^{230}Th, although its effect is limited by relatively little "in-growth".

(e) IMBA's assumption of "shared" kinetics for ^{228}Ra, ^{224}Ra, ^{212}Pb and ^{212}Bi leads to very much higher doses calculated by IMBA, especially for the bone surface, red bone marrow, and gonads. The biokinetic behavior of ^{228}Ra and ^{224}Ra is markedly different from that of the parent ^{232}Th.

(f) IMBA's assumption of "shared" kinetics, especially for ^{234}U, ^{226}Ra, leads to substantially higher calculated doses, for the bone surface, red bone marrow, and gonads and, most markedly for the remainder. The biokinetic behavior of ^{234}U and ^{226}Ra is markedly different from that of the parent ^{234}Th.

(g) IMBA assumes "shared" kinetics for the "in-grown" short-lived ^{231}Th progeny (bone surface seeker). However, in IMBA Expert™ OCAS/ORAU-Edition, "merging" the ^{231}Th disintegrations with those of the parent effectively compensates for any underestimation of bone surface and other doses – see discussion of "merged" ^{231}Th progeny decays for practical applications (Section C.8).

Table C.2.3. (Contd.).

No.	Radionuclide	Maximum Difference (%)	Intake Scenario/ Individual Organ(s) or Tissue(s)
103	**^{235}U**	**-1.93**[(a)]	Inhalation – type "M"/Bone Surface
104	^{236}U	-0.23	Inhalation – type "M"/Bone Surface
105	**^{238}U**	**-2.03**[(b)]	Inhalation – type "M"/Bone Surface
106	^{239}U	+0.09	Ingestion – f_1 = 0.02/Brain
107	^{88}Y	-0.08	Inhalation – type"M"/Thyroid
108	^{90}Y	+0.13	Ingestion – Various Soft Tissues
109	^{91}Y	+0.17	Inhalation – type "M"/Various Soft Tissues
110	^{169}Yb	-0.06	Inhalation/Colon/Thymus – Ingestion/Remainder
111	^{65}Zn	-0.04	Inhalation – Muscle/Bone Surface
112	^{95}Zr	-0.05	Inhalation – Various Soft Tissues

Overall Summary of Table C.2.3.

- Except for isotopes of tellurium, radium and thorium, ^{232}U, ^{235}U, ^{238}U and ^{210}Pb, for all other radionuclides implemented in Version 4.0, the committed equivalent doses calculated by IMBA Expert™ OCAS/ORAU-Edition for all non-respiratory-tract organs or tissues (including "remainder" tissues) satisfy the < ±1% accuracy criterion in comparison with the corresponding values calculated by **PLEIADES** (and ICRP Publication 68; ICRP 1994b). Indeed, for many radionuclides, the accuracy of these calculated doses is better than 0.1%.

- For ^{45}Ca, ^{131}Te, ^{131m}Te, ^{210}Pb, ^{223}Ra, ^{224}Ra, ^{226}Ra, ^{228}Ra, ^{228}Th, ^{230}Th, ^{232}Th, ^{234}Th,, ^{232}U, ^{235}U and ^{238}U, the "Overall Summary" comments made above (relating to Table C.2.2) also apply to Table C.2.3.

- For ^{228}Ra, ^{228}Th and ^{232}Th, the very large "overestimates" by IMBA Expert™ OCAS/ORAU-Edition of the committed equivalent dose to the *remainder* arise because the assumption of "shared" kinetics for the progeny radionuclides. The calculated *remainder* doses agree to within ±1% when **PLEIADES** is set up to assume "shared" kinetics.[(c)]

Key Practical Reminder: For intakes of ^{230}Th, an accurate emulation of the doses calculated by PLEIADES (ICRP) is obtained simply by using the "Speed" option in IMBA Expert™ OCAS/ORAU-Edition – see Appendix A: Technical Basis (Section A.8.4.0.1). With this option, "in-growth" of the progeny ^{226}Ra is ignored. Since the doses contributed by "in-grown" ^{226}Ra are negligible, using the "Speed" option for ^{230}Th avoids the overestimation of ICRP-recommended dose coefficients that results from the default "Super-merge" calculation.

[(a)] IMBA assumes "shared" kinetics for the "in-grown" short-lived ^{231}Th progeny (bone surface seeker). However, in IMBA Expert™ OCAS/ORAU-Edition, "merging" the ^{231}Th disintegrations with those of the parent effectively compensates for any underestimation of bone surface and other doses – see discussion of "merged" ^{231}Th progeny decays for practical applications (Section C.8).

[(b)] IMBA assumes "shared" kinetics for the "in-grown" short-lived ^{234}Th/^{234m}Pa/^{234}Pa progeny (bone surface seekers). However, in IMBA Expert™ OCAS/ORAU-Edition, "merging" the disintegrations of the short-lived progeny with those of the parent effectively compensates for any underestimation of bone surface and other doses (except for doses to parts of the GI tract) – see also discussion of "merged" ^{234}Th/^{234m}Pa/^{234}Pa progeny decays for practical applications (Section C.8).

[(c)] A listing of the doses per unit intake calculated by **PLEIADES** for "shared" progeny kinetics is available to registered Users of IMBA Expert™ OCAS/ORAU-Edition on CD-ROM (through www.imbaexpertsupport.com).

C.3. Benchmarking of Doses Integrated over Various Times

Table C.3.1 lists (for each radionuclide) the maximum difference between values of equivalent tissue dose calculated by IMBA Expert™ OCAS/ORAU-Edition and **PLEIADES** under the same assumed exposure conditions, for 10 different periods of integration. The ten periods of integration are 1 d, 7 d, 30 d, 1 y, 5 y, 10 y, 20 y, 30 y, 45 y and 50 y.

Table C.3.1. Benchmark comparison of equivalent organ/tissue dose per unit intake calculated by IMBA Expert™ OCAS-Edition and PLEIADES for 10 integration periods.[a,b]

No.	Radionuclide	Maximum Difference (%)	For Intake Route	For Integration Period
1	^{227}Ac	-0.44	Inhalation	30 d
2	^{228}Ac	-0.59	Inhalation	30 d
3	^{110m}Ag	+0.22	Inhalation	7 d
4	^{241}Am	+0.28	Inhalation	1 d
5	^{243}Am	+0.25	Inhalation	7 d
6	^{74}As	-0.37	Inhalation	≥1 y
7	^{133}Ba	-0.18	Inhalation	45 y
8	^{140}Ba	-0.27	Inhalation	1 d
9	^{249}Bk	-0.735	Ingestion	50 y
10	^{14}C	+0.89	Ingestion (organic particulate)	30 d
11	**^{45}Ca**	**1208**	**Ingestion**	**1 d**
12	^{139}Ce	-0.41	Inhalation	7 d
13	^{141}Ce	-0.41	Inhalation	30 d
14	^{143}Ce	-0.42	Inhalation	30 d
15	^{144}Ce	-0.33	Inhalation	7 d
16	^{249}Cf	0.285	Inhalation	1 d
17	^{252}Cf	-0.83	Inhalation	1 y
18	^{36}Cl	-0.38	Inhalation	1 d
19	^{242}Cm	-0.27	Inhalation	30 y
20	^{243}Cm	-0.27	Inhalation	30 d
21	^{244}Cm	-0.26	Inhalation	30 d
22	^{57}Co	-0.34	Inhalation	7 d
23	^{58}Co	-0.36	Inhalation	7 d
24	^{60}Co	-0.34	Inhalation	7 d
25	^{51}Cr	-0.10	Ingestion	1 d
26	^{134}Cs	-0.18	Inhalation	1 d
27	^{137}Cs	-0.21	Inhalation	1 d
28	^{152}Eu	-0.35	Inhalation	7 d
29	^{154}Eu	-0.35	Inhalation	7 d
30	^{155}Eu	-0.29	Inhalation	7 d
31	^{156}Eu	-0.32	Inhalation	7 d
32	**^{55}Fe**	**-**	**-**	**-**
33	^{59}Fe	-0.36	Inhalation	7 d
34A	^{3}H	-0.12	Injection (organic particulate)	1 y
34B	^{3}H	-0.13	Injection (inorganic particulate)	1 d
35	^{181}Hf	-0.36	Inhalation	7 d

[a] Doses were calculated for acute inhalation and/or ingestion/injection.

[b] Doses calculated as a function of time for ^{45}Ca ^{55}Fe, ^{210}Pb, ^{223}Ra ^{224}Ra, ^{226}Ra, ^{228}Ra, ^{131}Te, $^{131\,M}$Te, ^{228}Th, ^{230}Th, ^{232}Th, ^{234}Th, ^{232}U ^{235}U and ^{238}U are not compared here. For ^{55}Fe, ICRP's (and **PLEIADES**') implementation of the GI tract model is incorrect. For the other excluded radionuclides, ICRP (and **PLEIADES**) have assumed "independent" kinetics, whereas IMBA Expert™ OCAS/ORAU-Edition assumes "shared" kinetics.

Table C.3.1. (Contd.)

No.	Radionuclide	Maximum Difference (%)	For Intake Route	For Integration Period
36A	^{203}Hg	-0.36	Inhalation (Inorganic)	1 y
36B	^{203}Hg	-0.26	Inhalation (organic)	1 d
37	^{125}I	+0.11	Inhalation (particulate)	≥ 5 y
38	^{129}I	-0.28	Inhalation (particulate)	7 d
39	^{131}I	-0.28	Inhalation (particulate)	1 d
40	^{133}I	-0.25	Inhalation (particulate)	≥ 30 d
41	^{134}I	-0.30	Inhalation (particulate)	≥ 1 d
42	^{135}I	-0.25	Inhalation (particulate)	1 d
43	^{192}Ir	-0.39	Inhalation	30 d
44	^{140}La	-0.32	Inhalation	1 d
45	^{174}Lu	-0.29	Inhalation	7 d
46	^{99}Mo	-0.34	Inhalation	7 d
47	^{54}Mn	-0.12	Inhalation	7 d
48	^{22}Na	-0.14	Inhalation	≥ 10 y
49	^{24}Na	-0.17	Inhalation	1 d
50	^{94}Nb	-0.37	Inhalation	30 d
51	^{95}Nb	-0.30	Inhalation	7 d
52	^{63}Ni	+0.26	Inhalation	7 d
53	^{237}Np	+0.28	Inhalation	1 d
54	^{239}Np	-0.37	Inhalation	1 y
55	^{32}P	-0.32	Inhalation	7 d
56	^{33}P	+0.64	Inhalation	1 y
57	^{231}Pa	+0.27	Inhalation	30 d
58	^{233}Pa	-0.37	Inhalation	5 y
59	^{234}Pa	-0.34	Inhalation	1 d
60	**^{210}Pb**	**190**	**Ingestion**	**≥ 45 y**
61	^{147}Pm	-0.36	Inhalation	7 d
62	^{208}Po	-0.25	Inhalation	7 d
63	^{209}Po	0.29	Inhalation	30 d
64	^{210}Po	+0.25	Inhalation	1 y
65	^{143}Pr	-0.39	Inhalation	≥1 y
66	^{147}Pr	-0.40	Inhalation	7 d
67	^{238}Pu	-0.46	Inhalation	30 d
68	^{239}Pu	-0.45	Ingestion	30 d
69	^{240}Pu	-0.45	Ingestion	30 d
70	^{241}Pu	-0.75	Inhalation	50 y
71	^{242}Pu	-0.44	Inhalation	30 d
72	**^{223}Ra**	**-50**	**Ingestion**	**≥45 y**
73	**^{224}Ra**	**-**	**-**	**-**
74	**^{226}Ra**	**-**	**-**	**-**
75	**^{228}Ra**	**-**	**-**	**-**
76	^{103}Ru	-0.28	Inhalation	30 d
77	^{106}Ru	-0.29	Inhalation	7 d
78A	^{35}S	-0.26	Inhalation (organic particulate)	1 d
78B	^{35}S	-0.32	Inhalation (inorganic particulate)	30 d
79	^{124}Sb	-0.34	Inhalation	1 d
80	^{125}Sb	-0.36	Inhalation	30 d
81	^{46}Sc	-0.36	Inhalation	7 d
82	^{151}Sm	0.25	Inhalation	30 d
83	^{113}Sn	-0.39	Inhalation	7 d
84	^{85}Sr	-0.16	Inhalation	7 d
85	^{89}Sr	-0.33	Inhalation	7 d
86	^{90}Sr	-0.35	Inhalation	30 d

Table C.3.1. (Contd.)

No.	Radionuclide	Maximum Difference (%)	For Intake Route	For Integration Period
87	^{91}Sr	-0.36	Inhalation	1 y
88	^{182}Ta	-0.37	Inhalation	30 d
89	^{160}Tb	-0.36	Inhalation	7 d
90	^{99}Tc	-0.39	Inhalation	30 d
91	**^{131}Te**	**3435**	**Vapor**	**50 y**
92	**^{131m}Te**	**3946**	**Inhalation**	**50 y**
93	**^{228}Th**	**-**	**-**	**-**
94	**^{230}Th**	**-**	**-**	**-**
95	**^{232}Th**	**-**	**-**	**-**
96	**^{234}Th**	**69**	**Inhalation**	**50 y**
97	^{201}Tl	-0.18	Inhalation	1 d
98	^{202}Tl	-0.10	Inhalation	30 d
99	^{204}Tl	-0.21	Inhalation	1 d
100	^{170}Tm	-0.37	Inhalation	7 d
101	**^{232}U**	**-93.76**	**Inhalation**	**10 y**
102	^{234}U	+0.36	Ingestion	5 y
103	**^{235}U**	**-**	**-**	**-**
104	^{236}U	+0.36	Ingestion	5 y
105	**^{238}U**	**-**	**-**	**-**
106	^{239}U	0.71	Inhalation	50 y
107	^{88}Y	-0.16	Inhalation	≥5 y
108	^{90}Y	-0.31	Inhalation	1 d
109	^{91}Y	-0.36	Inhalation	1 d
110	^{169}Yb	-0.38	Inhalation	30 d
111	^{65}Zn	-0.21	Inhalation	30 d
112	^{95}Zr	-0.38	Inhalation	1 d

Overall summary of Table C.3.1.

- For all the radionuclides implemented in Version 4.0, other than isotopes of calcium, iron, lead, radium, tellurium, thorium, ^{232}U, ^{235}U and ^{238}U, the equivalent tissue/organ doses calculated by IMBA Expert™ OCAS/ORAU-Edition for each of the ten test integration periods satisfy the < ±1% accuracy criterion, in comparison with the corresponding values calculated by **PLEIADES** (and ICRP Publication 68; ICRP 1994b). [(a)]
- For ^{131}Te, ^{131m}Te, ^{223}Ra, ^{224}Ra, ^{228}Ra, ^{228}Th, ^{230}Th, ^{232}Th, ^{234}Th, ^{232}U, ^{235}U and ^{238}U, differences in organ doses calculated by IMBA Expert™ OCAS/ORAU-Edition and **PLEIADES** occur because **PLEIADES** (and ICRP Publication 68; ICRP 1994b) assume "independent" progeny kinetics, whereas IMBA Expert™ OCAS/ORAU-Edition assumes "shared" kinetics.
- Although IMBA Expert™ OCAS/ORAU-Edition approximates independent progeny kinetics for ^{226}Ra, the equivalent doses calculated for several tissues differ from the corresponding values calculated by **PLEIADES**, by up to 35% for the kidneys (for the longest integration period of 50 y).
- For ^{45}Ca and ^{55}Fe, the **PLEIADES** and ICRP Publication 68 (ICRP 1994b) values are erroneous, because they are not based on ICRP's currently recommended biokinetic and metabolic models, respectively.

[(a)] For the 8 radionuclides with no values listed in Table C.3.1, benchmark doses calculated by **PLEIADES** (under the same kinetic assumptions as IMBA Expert™ OCAS/ORAU-Edition) were only available for the 50-y integration period for "committed" dose. Under these special assumptions, the IMBA Expert™ OCAS/ORAU-Edition accuracy criterion was satisfied.

C.4. Dose Calculations for Multiple Intakes

Section C.2 has verified that the committed equivalent doses and effective doses calculated by IMBA Expert™ OCAS/ORAU-Edition satisfy the ±1% accuracy criterion, for all the radionuclides implemented in Version 4.0 other than isotopes of tellurium, radium, thorium, ^{210}Pb, ^{232}U, ^{235}U and ^{238}U. This section tests whether IMBA Expert™ OCAS/ORAU-Edition calculates identical doses for multiple intakes, irrespective of the time of intake.

The "multiple intake" functionality is tested by setting up identical intake amounts and conditions for each of the ten available "intake regimes" (IRs), where each intake occurs at a different time, and checking that the calculated doses for each IR are identical. Also, the calculated total equivalent dose to each organ/tissue is checked to verify that it is 10 times the dose calculated for each IR. Tables C.4.1 and C.4.2 show the results obtained for 10 separate inhalations of 1 Bq ^{239}Pu, of type "M", f_1 = 0.0005, with ICRP's default aerosol conditions, at times 0, 10, 100, 500, 1000, 2000, 5000, 10000, 15000 and 20000 d. For these calculations, nuclear recoil energy was excluded from the ^{239}Pu, as was done for the "benchmark" comparisons with **PLEIADES**' (ICRP's) calculated values for a single intake (Section C.9.49). Table C.4.1 shows the committed equivalent doses calculated for each intake, and Table C.4.2 the effective doses.

Tables C.4.1 and C.4.2 show that:

- For all tissues or organs, the calculated committed doses are identical for each of the ten separate intakes.
- For all tissues or organs, the total committed doses (right column in each table) are correct, *i.e.*, equal to 10 × the corresponding value for each individual 1-Bq intake.

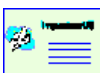
C.4.1. Multiple Intakes of Different Type

Tables C.4.3 and C.4.4 show the results of calculating and adding doses committed by intakes of different type (for equivalent and effective doses, respectively). In this test case, there are three separate intakes, each of ^{239}Pu – but under the following different conditions:

1. IR(1) – Inhalation; ICRP default aerosol; type "M"; f_1 = 0.0005.
2. IR(2) – Inhalation; ICRP default aerosol; type "S"; f_1 = 0.00001.
3. IR(3) – Ingestion; f_1 = 0.0005.

Tables C.4.3 and C.4.4 show that (in this example):

- For all tissues or organs, the calculated committed doses are additive for all three intake regimes.
- For all tissues or organs, the total committed doses (right column in each table) are also added correctly by IMBA Expert™ OCAS/ORAU-Edition.



Important Note: If the composition of the *remainder* varies between intake regimes, then the equivalent doses calculated for the *remainder* will NOT be additive (see **Appendix A: Technical Basis**, Section A.8.2.1.2 for description of the rules applied by IMBA Expert™ OCAS/ORAU-Edition to add equivalent doses from multiple intakes). In such case, neither will the total effective dose calculated for each intake be additive. ICRP gives no guidance on this matter.

Table C.4.1. Committed equivalent dose coefficients calculated for 10 separate intakes of ^{239}Pu.

	Equivalent Dose (Sv) for Intake Regime Number/Time of Acute Intake, d										
Target Organ/Tissue	**IR(1)/ 0**	**IR(2)/ 10**	**IR(3)/ 100**	**IR(4)/ 500**	**IR(5)/ 1,000**	**IR(6)/ 2,000**	**IR(7)/ 5,000**	**IR(8)/ 10,000**	**IR(9)/ 15,000**	**IR(10)/ 20,000**	**Total Dose**
Adrenals	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Urinary Bladder	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Brain	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Breast	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Gall Bladder	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Heart Wall	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Kidneys	4.09E-06	4.09E-06	4.09E-06	4.09E-06	4.09E-06	4.09E-06	4.09E-06	4.09E-06	4.09E-06	4.09E-06	**4.09E-05**
Liver	2.09E-04	2.09E-04	2.09E-04	2.09E-04	2.09E-04	2.09E-04	2.09E-04	2.09E-04	2.09E-04	2.09E-04	**2.09E-03**
Muscle	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Ovaries	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	**1.30E-04**
Pancreas	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Testes	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	**1.33E-04**
Thyroid	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
R.B.M.	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	4.80E-05	**4.80E-04**
Bone Surface	1.01E-03	1.01E-03	1.01E-03	1.01E-03	1.01E-03	1.01E-03	1.01E-03	1.01E-03	1.01E-03	1.01E-03	**1.01E-02**
Stomach	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
S.I.	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
U.L.I.	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	**1.76E-05**
L.L.I.	1.77E-06	1.77E-06	1.77E-06	1.77E-06	1.77E-06	1.77E-06	1.77E-06	1.77E-06	1.77E-06	1.77E-06	**1.77E-05**
Skin	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Spleen	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Thymus	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Uterus	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
ET	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	**1.49E-04**
Lung	2.07E-05	2.07E-05	2.07E-05	2.07E-05	2.07E-05	2.07E-05	2.07E-05	2.07E-05	2.07E-05	2.07E-05	**2.07E-04**
Colon	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	**1.76E-05**
ET1	3.20E-06	3.20E-06	3.20E-06	3.20E-06	3.20E-06	3.20E-06	3.20E-06	3.20E-06	3.20E-06	3.20E-06	**3.20E-05**
ET2	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	**1.49E-04**
LN(ET)	2.32E-06	2.32E-06	2.32E-06	2.32E-06	2.32E-06	2.32E-06	2.32E-06	2.32E-06	2.32E-06	2.32E-06	**2.32E-05**
BBsec	5.15E-05	5.15E-05	5.15E-05	5.15E-05	5.15E-05	5.15E-05	5.15E-05	5.15E-05	5.15E-05	5.15E-05	**5.15E-04**
BBbas	5.32E-06	5.32E-06	5.32E-06	5.32E-06	5.32E-06	5.32E-06	5.32E-06	5.32E-06	5.32E-06	5.32E-06	**5.32E-05**
bb	2.39E-05	2.39E-05	2.39E-05	2.39E-05	2.39E-05	2.39E-05	2.39E-05	2.39E-05	2.39E-05	2.39E-05	**2.39E-04**
AI	9.90E-06	9.90E-06	9.90E-06	9.90E-06	9.90E-06	9.90E-06	9.90E-06	9.90E-06	9.90E-06	9.90E-06	**9.90E-05**
LN(TH)	4.40E-06	4.40E-06	4.40E-06	4.40E-06	4.40E-06	4.40E-06	4.40E-06	4.40E-06	4.40E-06	4.40E-06	**4.40E-05**
Esophagus	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	1.75E-06	**1.75E-05**
Gonads	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05	**1.33E-04**
Remainder	1.78E-06	1.78E-06	1.78E-06	1.78E-06	1.78E-06	1.78E-06	1.78E-06	1.78E-06	1.78E-06	1.78E-06	**1.78E-05**

Table C.4.2. Effective dose coefficients calculated for 10 separate intakes.

	Contribution to Effective Dose (Sv) for Intake Regime Number/Time of Acute Intake, d										
Target Organ/Tissue	**IR(1)/ 0**	**IR(2)/ 10**	**IR(3)/ 100**	**IR(4)/ 500**	**IR(5)/ 1,000**	**IR(6)/ 2,000**	**IR(7)/ 5,000**	**IR(8)/ 10,000**	**IR(9)/ 15,000**	**IR(10)/ 20,000**	**Total Dose**
Adrenals	–	–	–	–	–	–	–	–	–	–	–
Urinary Bladder	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	**8.74E-07**
Brain	–	–	–	–	–	–	–	–	–	–	–
Breast	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	**8.74E-07**
Gall Bladder	–	–	–	–	–	–	–	–	–	–	–
Heart Wall	–	–	–	–	–	–	–	–	–	–	–
Kidneys	–	–	–	–	–	–	–	–	–	–	–
Liver	1.04E-05	1.04E-05	1.04E-05	1.04E-05	1.04E-05	1.04E-05	1.04E-05	1.04E-05	1.04E-05	1.04E-05	**1.04E-04**
Muscle	–	–	–	–	–	–	–	–	–	–	–
Ovaries	–	–	–	–	–	–	–	–	–	–	–
Pancreas	–	–	–	–	–	–	–	–	–	–	–
Testes	–	–	–	–	–	–	–	–	–	–	–
Thyroid	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	**8.74E-07**
R.B.M.	5.75E-06	5.75E-06	5.75E-06	5.75E-06	5.75E-06	5.75E-06	5.75E-06	5.75E-06	5.75E-06	5.75E-06	**5.75E-05**
Bone Surface	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	**1.01E-04**
Stomach	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	2.10E-07	**2.10E-06**
S.I.	–	–	–	–	–	–	–	–	–	–	–
U.L.I.	–	–	–	–	–	–	–	–	–	–	–
L.L.I.	–	–	–	–	–	–	–	–	–	–	–
Skin	1.75E-08	1.75E-08	1.75E-08	1.75E-08	1.75E-08	1.75E-08	1.75E-08	1.75E-08	1.75E-08	1.75E-08	**1.75E-07**
Spleen	–	–	–	–	–	–	–	–	–	–	–
Thymus	–	–	–	–	–	–	–	–	–	–	–
Uterus	–	–	–	–	–	–	–	–	–	–	–
ET	–	–	–	–	–	–	–	–	–	–	–
Lung	2.49E-06	2.49E-06	2.49E-06	2.49E-06	2.49E-06	2.49E-06	2.49E-06	2.49E-06	2.49E-06	2.49E-06	**2.49E-05**
Colon	2.12E-07	2.12E-07	2.12E-07	2.12E-07	2.12E-07	2.12E-07	2.12E-07	2.12E-07	2.12E-07	2.12E-07	**2.12E-06**
ET1	–	–	–	–	–	–	–	–	–	–	–
ET2	–	–	–	–	–	–	–	–	–	–	–
LN(ET)	–	–	–	–	–	–	–	–	–	–	–
BBsec	–	–	–	–	–	–	–	–	–	–	–
BBbas	–	–	–	–	–	–	–	–	–	–	–
bb	–	–	–	–	–	–	–	–	–	–	–
AI	–	–	–	–	–	–	–	–	–	–	–
LN(TH)	–	–	–	–	–	–	–	–	–	–	–
Esophagus	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	8.74E-08	**8.74E-07**
Gonads	2.66E-06	2.66E-06	2.66E-06	2.66E-06	2.66E-06	2.66E-06	2.66E-06	2.66E-06	2.66E-06	2.66E-06	**2.66E-05**
Remainder	8.89E-08	8.89E-08	8.89E-08	8.89E-08	8.89E-08	8.89E-08	8.89E-08	8.89E-08	8.89E-08	8.89E-08	**8.89E-07**
TOTAL (Effective Dose)	**3.23E-05**	**3.23E-05**	**3.23E-05**	**3.23E-05**	**3.23E-05**	**3.23E-05**	**3.23E-05**	**3.23E-05**	**3.23E-05**	**3.23E-05**	**3.23E-04**

Table C.4.3. Committed equivalent doses calculated for 3 separate ^{239}Pu intakes of different type.

	Equivalent Dose for Route of Intake/Absorption Type			Total Dose	
Target Organ/Tissue	**Inhalation/type "M" (5 Bq)**	**Inhalation/type "S" (50 Bq)**	**Ingestion/type "M" (500 Bq)**	**By IMBA**	**By Hand**
Adrenals	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Urinary Bladder	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Brain	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Breast	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Gall Bladder	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Heart Wall	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Kidneys	2.04E-05	1.93E-05	1.66E-05	**5.64E-05**	**5.63E-05**
Liver	1.04E-03	9.48E-04	8.50E-04	**2.84E-03**	**2.84E-03**
Muscle	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Ovaries	6.51E-05	5.90E-05	5.31E-05	**1.77E-04**	**1.77E-04**
Pancreas	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Testes	6.64E-05	6.01E-05	5.41E-05	**1.81E-04**	**1.81E-04**
Thyroid	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
R.B.M.	2.40E-04	2.24E-04	1.95E-04	**6.59E-04**	**6.59E-04**
Bone Surface	5.05E-03	4.54E-03	4.11E-03	**1.37E-02**	**1.37E-02**
Stomach	8.75E-06	7.73E-06	7.73E-06	**2.42E-05**	**2.42E-05**
S.I.	8.75E-06	7.77E-06	8.62E-06	**2.51E-05**	**2.51E-05**
U.L.I.	8.78E-06	8.13E-06	1.62E-05	**3.31E-05**	**3.31E-05**
L.L.I.	8.86E-06	8.96E-06	3.36E-05	**5.14E-05**	**5.14E-05**
Skin	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Spleen	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Thymus	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Uterus	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
ET	7.44E-05	3.99E-03	7.13E-06	**4.07E-03**	**4.07E-03**
Lung	1.04E-04	2.33E-03	7.13E-06	**2.44E-03**	**2.44E-03**
Colon	8.81E-06	8.49E-06	2.37E-05	**4.10E-05**	**4.10E-05**
ET1	1.60E-05	8.01E-05	7.13E-06	**1.03E-04**	**1.03E-04**
ET2	7.46E-05	3.99E-03	7.13E-06	**4.07E-03**	**4.07E-03**
LN(ET)	1.16E-05	7.08E-03	7.13E-06	**7.10E-03**	**7.10E-03**
BBsec	2.58E-04	3.26E-03	7.13E-06	**3.52E-03**	**3.53E-03**
BBbas	2.66E-05	2.98E-04	7.13E-06	**3.32E-04**	**3.32E-04**
bb	1.19E-04	1.66E-03	7.13E-06	**1.79E-03**	**1.79E-03**
AI	4.95E-05	3.47E-03	7.13E-06	**3.53E-03**	**3.53E-03**
LN(TH)	2.20E-05	2.44E-02	7.13E-06	**2.44E-02**	**2.44E-02**
Esophagus	8.74E-06	7.70E-06	7.13E-06	**2.36E-05**	**2.36E-05**
Gonads	6.64E-05	6.01E-05	5.41E-05	**1.81E-04**	**1.81E-04**
Remainder	8.89E-06	9.76E-06	7.26E-06	**2.59E-05**	**2.59E-05**

Table C.4.4. Effective doses calculated for 3 separate ^{239}Pu intakes of different type.[a]

Target Organ/Tissue	Contribution to Effective Dose for Route of Intake/Absorption Type			Total Dose	
	Inhalation/type "M" (5 Bq)	Inhalation/type "S" (50 Bq)	Ingestion/type "M" (500 Bq)	By IMBA	By Hand
Adrenals	–	–	–	–	–
Urinary Bladder	4.37E-07	3.85E-07	3.57E-07	**1.18E-06**	**1.18E-06**
Brain	–	–	–	–	–
Breast	4.37E-07	3.85E-07	3.56E-07	**1.18E-06**	**1.18E-06**
Gall Bladder	–	–	–	–	–
Heart Wall	–	–	–	–	–
Kidneys	–	–	–	–	–
Liver	5.22E-05	4.74E-05	4.25E-05	**1.42E-04**	**1.42E-04**
Muscle	–	–	–	–	–
Ovaries	–	–	–	–	–
Pancreas	–	–	–	–	–
Testes	–	–	–	–	–
Thyroid	4.37E-07	3.85E-07	3.56E-07	**1.18E-06**	**1.18E-06**
R.B.M.	2.88E-05	2.69E-05	2.34E-05	**7.91E-05**	**7.91E-05**
Bone Surface	5.05E-05	4.54E-05	4.11E-05	**1.37E-04**	**1.37E-04**
Stomach	1.05E-06	9.27E-07	9.27E-07	**2.90E-06**	**2.90E-06**
S.I.	–	–	–	–	–
U.L.I.	–	–	–	–	–
L.L.I.	–	–	–	–	–
Skin	8.74E-08	7.70E-08	7.13E-08	**2.36E-07**	**2.36E-07**
Spleen	–	–	–	–	–
Thymus	–	–	–	–	–
Uterus	–	–	–	–	–
ET	–	–	–	–	–
Lung	1.24E-05	2.79E-04	8.56E-07	**2.92E-04**	**2.92E-04**
Colon	1.06E-06	1.02E-06	2.85E-06	**4.92E-06**	**4.93E-06**
ET1	–	–	–	–	–
ET2	–	–	–	–	–
LN(ET)	–	–	–	–	–
BBsec	–	–	–	–	–
BBbas	–	–	–	–	–
bb	–	–	–	–	–
AI	–	–	–	–	–
LN(TH)	–	–	–	–	–
Esophagus	4.37E-07	3.85E-07	3.56E-07	**1.18E-06**	**1.18E-06**
Gonads	1.33E-05	1.20E-05	1.08E-05	**3.61E-05**	**3.61E-05**
Remainder	**4.45E-07**	**4.88E-07**	**3.63E-07**	**1.30E-06**	**1.30E-06**
TOTAL	**1.61E-04**	**4.15E-04**	**1.24E-04**	**7.01E-04**	**7.00E-04**[b]

[a] The effective doses calculated for the *remainder*, and hence the total effective dose, are additive across these 3 separate intakes (in this example). The effective doses are NOT additive if the composition of the *remainder* varies between different intakes (see **Appendix A: Technical Basis**, Section A.8.2.1.2).

[b] The difference in the second decimal place for the "by hand" total effective dose arises from the "rounding" error, where the total effective dose for each separate intake is given (displayed in IMBA Expert™ OCAS/ORAU-Edition) to only 2 decimal places.

C.5. Dose Calculations for Truncated Chronic Intakes

The "truncated chronic intake" functionality is tested here by setting up eight separate intakes, with identical total intake amounts and conditions, except for the duration of each intake. Thus, if IMBA Expert™ OCAS/ORAU-Edition is operating correctly, for each intake regime, the committed equivalent doses to the organs/tissues and effective doses should be identical. This follows because the total number of disintegrations from all radioactive atoms taken into the body is integrated over the same dose-commitment period (50 y). The tested intake scenarios are:

1. **IR(1)** – Acute inhalation of 33.33333 Bq.

2. **IR(2)** – Chronic inhalation between 6:00 AM on January 4th, 1980 and 8:24 AM on January 4th, 1980 (0.1-d duration) at the rate of 333.3333 Bq d^{-1}.

3. **IR(3)** – Chronic inhalation between 8:00 AM on January 4th, 1980 and 4:00 PM on January 4th, 1980 (0.3333-d duration) at the rate of 100 Bq d^{-1}.

4. **IR(4)** – Chronic inhalation between 7:30 AM on January 4th, 1980 and 7:30 AM on January 5th, 1980 (1-d duration) at the rate of 33.33333 Bq d^{-1}.

5. **IR(5)** – Chronic inhalation between 6:00 AM on June 6th, 1981 and 6:00 AM on July 6th, 1981 (30-d duration) at the rate of 1.111111 Bq d^{-1}.

6. **IR(6)** – Chronic inhalation between 2:00 PM on August 8th, 1981 and 2:00 PM on June 4th, 1982 (300-d duration) at the rate of 0.111111 Bq d^{-1}.

7. **IR(7)** – Chronic inhalation between 6:00 PM on November 15th, 1983 and 6:00 PM on February 1st, 1992 (3,000-d duration) at the rate of 0.011111 Bq d^{-1}.

8. **IR(8)** – Chronic inhalation between 4:00 AM on August 21st, 1991 and 4:00 AM on October 9th, 2073 (30,000-d duration) at the rate of 0.0011111 Bq d^{-1}.

For all eight intake scenarios, the inhaled material is assumed to be ^{239}Pu (type "S" with the ICRP default aerosol characteristics). Again, the nuclear recoil energy is excluded from the ^{239}Pu SEEs.

Table C.5.1 shows the committed equivalent doses calculated for each intake. Table C.5.2 shows the effective doses. These tables show that (for the same total amount of intake – 33.33333 Bq):

- For all tissues or organs, the calculated committed doses and effective doses are identical, irrespective of the duration of the intake.

- IMBA Expert™ OCAS/ORAU-Edition correctly implements truncated chronic intakes (of any duration), taking into account the 366-d "leap year" and also the time-of-day (in hours:minutes:seconds).

Table C.5.1. Committed equivalent doses calculated for 8 separate intakes of ^{239}Pu of various duration.

	Equivalent Dose (Sv) for Intake Regime Number/Duration of Intake, d							
Target Organ/Tissue	**IR(1)/ Acute**	**IR(2)/ 0.1**	**IR(3)/ 0.3333**	**IR(4)/ 1**	**IR(5)/ 30**	**IR(6)/ 300**	**IR(7)/ 3,000**	**IR(8)/ 30,000**
Adrenals	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Urinary Bladder	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Brain	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Breast	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Gall Bladder	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Heart Wall	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Kidneys	1.29E-05	1.29E-05	1.29E-05	1.29E-05	1.29E-05	1.29E-05	1.29E-05	1.29E-05
Liver	6.32E-04	6.32E-04	6.32E-04	6.32E-04	6.32E-04	6.32E-04	6.32E-04	6.32E-04
Muscle	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Ovaries	3.93E-05	3.93E-05	3.93E-05	3.93E-05	3.93E-05	3.93E-05	3.93E-05	3.93E-05
Pancreas	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Testes	4.01E-05	4.01E-05	4.01E-05	4.01E-05	4.01E-05	4.01E-05	4.01E-05	4.01E-05
Thyroid	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
R.B.M.	1.50E-04	1.50E-04	1.50E-04	1.50E-04	1.50E-04	1.50E-04	1.50E-04	1.50E-04
Bone Surface	3.03E-03	3.03E-03	3.03E-03	3.03E-03	3.03E-03	3.03E-03	3.03E-03	3.03E-03
Stomach	5.15E-06	5.15E-06	5.15E-06	5.15E-06	5.15E-06	5.15E-06	5.15E-06	5.15E-06
S.I.	5.18E-06	5.18E-06	5.18E-06	5.18E-06	5.18E-06	5.18E-06	5.18E-06	5.18E-06
U.L.I.	5.42E-06	5.42E-06	5.42E-06	5.42E-06	5.42E-06	5.42E-06	5.42E-06	5.42E-06
L.L.I.	5.97E-06	5.97E-06	5.97E-06	5.97E-06	5.97E-06	5.97E-06	5.97E-06	5.97E-06
Skin	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Spleen	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Thymus	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Uterus	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
ET	2.66E-03	2.66E-03	2.66E-03	2.66E-03	2.66E-03	2.66E-03	2.66E-03	2.66E-03
Lung	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03
Colon	5.66E-06	5.66E-06	5.66E-06	5.66E-06	5.66E-06	5.66E-06	5.66E-06	5.66E-06
ET1	5.34E-05	5.34E-05	5.34E-05	5.34E-05	5.34E-05	5.34E-05	5.34E-05	5.34E-05
ET2	2.66E-03	2.66E-03	2.66E-03	2.66E-03	2.66E-03	2.66E-03	2.66E-03	2.66E-03
LN(ET)	4.72E-03	4.72E-03	4.72E-03	4.72E-03	4.72E-03	4.72E-03	4.72E-03	4.72E-03
BBsec	2.17E-03	2.17E-03	2.17E-03	2.17E-03	2.17E-03	2.17E-03	2.17E-03	2.17E-03
BBbas	1.99E-04	1.99E-04	1.99E-04	1.99E-04	1.99E-04	1.99E-04	1.99E-04	1.99E-04
bb	1.11E-03	1.11E-03	1.11E-03	1.11E-03	1.11E-03	1.11E-03	1.11E-03	1.11E-03
AI	2.31E-03	2.31E-03	2.31E-03	2.31E-03	2.31E-03	2.31E-03	2.31E-03	2.31E-03
LN(TH)	1.63E-02	1.63E-02	1.63E-02	1.63E-02	1.63E-02	1.63E-02	1.63E-02	1.63E-02
Esophagus	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06	5.13E-06
Gonads	4.01E-05	4.01E-05	4.01E-05	4.01E-05	4.01E-05	4.01E-05	4.01E-05	4.01E-05
Remainder	6.51E-06	6.51E-06	6.51E-06	6.51E-06	6.51E-06	6.51E-06	6.51E-06	6.51E-06

Table C.5.2. Effective doses calculated for 8 separate intakes of ^{239}Pu of various duration.

	Contribution to Effective Dose (Sv) for Intake Regime Number/Duration of Intake, d							
Target Organ/Tissue	**IR(1)/ Acute**	**IR(2)/ 0.1**	**IR(3)/ 0.3333**	**IR(4)/ 1**	**IR(5)/ 30**	**IR(6)/ 300**	**IR(7)/ 3,000**	**IR(8)/ 30,000**
Adrenals	–	–	–	–	–	–	–	–
Urinary Bladder	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07
Brain	–	–	–	–	–	–	–	–
Breast	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07
Gall Bladder	–	–	–	–	–	–	–	–
Heart Wall	–	–	–	–	–	–	–	–
Kidneys	–	–	–	–	–	–	–	–
Liver	3.16E-05	3.16E-05	3.16E-05	3.16E-05	3.16E-05	3.16E-05	3.16E-05	3.16E-05
Muscle	–	–	–	–	–	–	–	–
Ovaries	–	–	–	–	–	–	–	–
Pancreas	–	–	–	–	–	–	–	–
Testes	–	–	–	–	–	–	–	–
Thyroid	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07
R.B.M.	1.80E-05	1.80E-05	1.80E-05	1.80E-05	1.80E-05	1.80E-05	1.80E-05	1.80E-05
Bone Surface	3.03E-05	3.03E-05	3.03E-05	3.03E-05	3.03E-05	3.03E-05	3.03E-05	3.03E-05
Stomach	6.18E-07	6.18E-07	6.18E-07	6.18E-07	6.18E-07	6.18E-07	6.18E-07	6.18E-07
S.I.	–	–	–	–	–	–	–	–
U.L.I.	–	–	–	–	–	–	–	–
L.L.I.	–	–	–	–	–	–	–	–
Skin	5.13E-08	5.13E-08	5.13E-08	5.13E-08	5.13E-08	5.13E-08	5.13E-08	5.13E-08
Spleen	–	–	–	–	–	–	–	–
Thymus	–	–	–	–	–	–	–	–
Uterus	–	–	–	–	–	–	–	–
ET	–	–	–	–	–	–	–	–
Lung	1.86E-04	1.86E-04	1.86E-04	1.86E-04	1.86E-04	1.86E-04	1.86E-04	1.86E-04
Colon	6.79E-07	6.79E-07	6.79E-07	6.79E-07	6.79E-07	6.79E-07	6.79E-07	6.79E-07
ET1	–	–	–	–	–	–	–	–
ET2	–	–	–	–	–	–	–	–
LN(ET)	–	–	–	–	–	–	–	–
BBsec	–	–	–	–	–	–	–	–
BBbas	–	–	–	–	–	–	–	–
bb	–	–	–	–	–	–	–	–
AI	–	–	–	–	–	–	–	–
LN(TH)	–	–	–	–	–	–	–	–
Esophagus	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07	2.57E-07
Gonads	8.01E-06	8.01E-06	8.01E-06	8.01E-06	8.01E-06	8.01E-06	8.01E-06	8.01E-06
Remainder	**3.25E-07**	**3.25E-07**	**3.25E-07**	**3.25E-07**	**3.25E-07**	**3.25E-07**	**3.25E-07**	**3.25E-07**
TOTAL (Effective Dose)	**2.77E-04**	**2.77E-04**	**2.77E-04**	**2.77E-04**	**2.77E-04**	**2.77E-04**	**2.77E-04**	**2.77E-04**

C.6. Dose Calculations for Associated Radionuclides

The "associated radionuclides" functionality is tested here by carrying out dose calculations in IMBA Expert™ OCAS/ORAU-Edition with the same radionuclide selected as the "Indicator Nuclide" and the "Associated Radionuclide". [(a)]

Tables C.6.1 and C.6.2 compare the calculated values of committed equivalent organ/tissue dose and effective doses, respectively, for intakes of ^{239}Pu by three different routes, as follows:

- Inhalation of 5 Bq, type "S" material.
- Ingestion of 5 Bq of material with $f_1 = 0.0005$.
- Injection of 25 Bq (soluble compound, *e.g.*, the citrate, injected intravenously).

For each route of intake, IMBA Expert™ OCAS/ORAU-Edition was run with ^{239}Pu selected as the indicator nuclide, and with 30 associated radionuclides defined, each as ^{239}Pu and each having 3.333333% of the activity of the indicator nuclide. Thus, if IMBA Expert™ OCAS/ORAU-Edition is operating correctly, the equivalent dose to organs and tissues arising from the indicator nuclide should be identical to the sum of the corresponding doses from the associated radionuclides.

Tables C.6.1 and C.6.2 compare all doses calculated for the indicator nuclide with the displayed *sum* of the corresponding doses calculated for the 30 "associated radionuclides".

For each route of intake, Tables C.6.1 and C.6.2 show that:

- The committed equivalent organ/tissue doses (per unit intake) calculated for an "associated" intake of ^{239}Pu is identical to that for ^{239}Pu treated as the "indicator" nuclide.

- The committed equivalent doses (per unit intake) calculated for an "associated" intake of ^{239}Pu is identical to that for ^{239}Pu treated as the "indicator" nuclide.

[(a)] IMBA Expert™ OCAS/ORAU-Edition enables the User to specify up to 30 associated radionuclides for a given indicator nuclide. We have verified that the order in which the associated radionuclides are specified has no effect on the calculated doses.

Table C.6.1. Committed equivalent doses calculated for different routes of intake of ^{239}Pu.

Target Organ/Tissue	Equivalent Dose (Sv) for Intakes as "Indicator" or "Associated" Radionuclides					
	Inhaled (5 Bq – type "S")		Ingested (5 Bq – f_1 = 0.0005)		Injected (25 Bq)	
	Indicator	Associated	Indicator	Associated	Indicator	Associated
Adrenals	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Urinary Bladder	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Brain	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Breast	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Gall Bladder	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Heart Wall	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Kidneys	1.93E-06	1.93E-06	1.66E-07	1.66E-07	1.66E-03	1.66E-03
Liver	9.48E-05	9.48E-05	8.50E-06	8.50E-06	8.50E-02	8.50E-02
Muscle	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Ovaries	5.90E-06	5.90E-06	5.31E-07	5.31E-07	5.31E-03	5.31E-03
Pancreas	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Testes	6.01E-06	6.01E-06	5.41E-07	5.41E-07	5.41E-03	5.41E-03
Thyroid	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
R.B.M.	2.24E-05	2.24E-05	1.95E-06	1.95E-06	1.95E-02	1.95E-02
Bone Surface	4.54E-04	4.54E-04	4.11E-05	4.11E-05	4.11E-01	4.11E-01
Stomach	7.73E-07	7.73E-07	7.73E-08	7.73E-08	7.13E-04	7.13E-04
S.I.	7.77E-07	7.77E-07	8.62E-08	8.62E-08	7.13E-04	7.13E-04
U.L.I.	8.13E-07	8.13E-07	1.62E-07	1.62E-07	7.13E-04	7.13E-04
L.L.I.	8.96E-07	8.96E-07	3.36E-07	3.36E-07	7.13E-04	7.13E-04
Skin	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Spleen	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Thymus	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Uterus	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
ET	3.99E-04	3.99E-04	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Lung	2.33E-04	2.33E-04	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Colon	8.49E-07	8.49E-07	2.37E-07	2.37E-07	7.13E-04	7.13E-04
ET1	8.01E-06	8.01E-06	7.13E-08	7.13E-08	7.13E-04	7.13E-04
ET2	3.99E-04	3.99E-04	7.13E-08	7.13E-08	7.13E-04	7.13E-04
LN(ET)	7.08E-04	7.08E-04	7.13E-08	7.13E-08	7.13E-04	7.13E-04
BBsec	3.26E-04	3.26E-04	7.13E-08	7.13E-08	7.13E-04	7.13E-04
BBbas	2.98E-05	2.98E-05	7.13E-08	7.13E-08	7.13E-04	7.13E-04
bb	1.66E-04	1.66E-04	7.13E-08	7.13E-08	7.13E-04	7.13E-04
AI	3.47E-04	3.47E-04	7.13E-08	7.13E-08	7.13E-04	7.13E-04
LN(TH)	2.44E-03	2.44E-03	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Esophagus	7.70E-07	7.70E-07	7.13E-08	7.13E-08	7.13E-04	7.13E-04
Gonads	6.01E-06	6.01E-06	5.41E-07	5.41E-07	5.41E-03	5.41E-03
Remainder	9.76E-07	9.76E-07	7.26E-08	7.26E-08	7.23E-04	7.23E-04

Table C.6.2. Effective doses calculated for different routes of intake of ^{239}Pu.

Target Organ/Tissue	Contribution to Effective Dose (Sv) for Intakes as "Indicator" or "Associated" Radionuclides					
	Inhaled (5 Bq – type "S")		Ingested (5 Bq – f_1 = 0.0005)		Injected (25 Bq)	
	Indicator	Associated	Indicator	Associated	Indicator	Associated
Adrenals	–	–	–	–	–	–
Urinary Bladder	3.85E-08	3.85E-08	3.57E-09	3.57E-09	3.57E-05	3.57E-05
Brain	–	–	–	–	–	–
Breast	3.85E-08	3.85E-08	3.56E-09	3.56E-09	3.57E-05	3.57E-05
Gall Bladder	–	–	–	–	–	–
Heart Wall	–	–	–	–	–	–
Kidneys	–	–	–	–	–	–
Liver	4.74E-06	4.74E-06	4.25E-07	4.25E-07	4.25E-03	4.25E-03
Muscle	–	–	–	–	–	–
Ovaries	–	–	–	–	–	–
Pancreas	–	–	–	–	–	–
Testes	–	–	–	–	–	–
Thyroid	3.85E-08	3.85E-08	3.56E-09	3.56E-09	3.57E-05	3.57E-05
R.B.M.	2.69E-06	2.69E-06	2.34E-07	2.34E-07	2.34E-03	2.34E-03
Bone Surface	4.54E-06	4.54E-06	4.11E-07	4.11E-07	4.11E-03	4.11E-03
Stomach	9.27E-08	9.27E-08	9.27E-09	9.27E-09	8.56E-05	8.56E-05
S.I.	–	–	–	–	–	–
U.L.I.	–	–	–	–	–	–
L.L.I.	–	–	–	–	–	–
Skin	7.70E-09	7.70E-09	7.13E-10	7.13E-10	7.13E-06	7.13E-06
Spleen	–	–	–	–	–	–
Thymus	–	–	–	–	–	–
Uterus	–	–	–	–	–	–
ET	–	–	–	–	–	–
Lung	2.79E-05	2.79E-05	8.56E-09	8.56E-09	8.56E-05	8.56E-05
Colon	1.02E-07	1.02E-07	2.85E-08	2.85E-08	8.56E-05	8.56E-05
ET1	–	–	–	–	–	–
ET2	–	–	–	–	–	–
LN(ET)	–	–	–	–	–	–
BBsec	–	–	–	–	–	–
BBbas	–	–	–	–	–	–
bb	–	–	–	–	–	–
AI	–	–	–	–	–	–
LN(TH)	–	–	–	–	–	–
Esophagus	3.85E-08	3.85E-08	3.56E-09	3.56E-09	3.57E-05	3.57E-05
Gonads	1.20E-06	1.20E-06	1.08E-07	1.08E-07	1.08E-03	1.08E-03
Remainder	**4.88E-08**	**4.88E-08**	**3.63E-09**	**3.63E-09**	**3.61E-05**	**3.61E-05**
TOTAL (Effective Dose)	**4.15E-05**	**4.15E-05**	**1.24E-06**	**1.24E-06**	**1.22E-02**	**1.22E-02**

C.7. Variable Deposition Parameters in the HRTM

As described in **Appendix A: Technical Basis** (Section A.4.2), the reference values of fractional deposition for regions of the respiratory tract that were recommended by ICRP in *Publication 66* (ICRP 1994a) were calculated by HPA-RPB's **LU**ng **D**ose **E**valuation **P**rogram, **LUDEP** (Jarvis et al 1996). Subsequently, HPA-RPB's **IMBA** code module "**IMBA_DEP**" runs the same compiled "deposition" code module as **LUDEP**, *i.e.,* "**DEP30.EXE**". Thus, the "input" regional deposition values calculated by "**IMBA_DEP**" are directly traceable to the original reference values recommended by ICRP.

Neither **PLEIADES**, nor the other codes used by ICRP to calculate the currently recommended dose coefficients (and "intake retention functions", **IRF**s) implement explicitly the *ICRP Publication 66* "deposition model" for the respiratory tract. Instead, **LUDEP**'s "**DEP30.EXE**" compiled code module was used to calculate "reference" values of regional deposition (for "Light Work", "Heavy Work" and the various categories of "Environmental" exposure) given in *ICRP Publications 66 and 71* (ICRP 1994a; 1995b).

The reference regional deposition values used by ICRP were rounded to 4 significant figures, whereas IMBA Expert™ OCAS/ORAU-Edition uses un-rounded values of the regional deposition fractions calculated by "**DEP30.EXE**".

Values of dose coefficients calculated by **PLEIADES** for aerosols other than the "ICRP default", or for "Heavy Work" are not currently available for comparison with the values calculated by IMBA Expert™ OCAS/ORAU-Edition for "non-standard" conditions. However, in respect to testing the deposition module against ICRP values, this comparison is not needed, since "**DEP30.EXE**" is the common source of the regional deposition fraction "input".

As a further check on the operation of the **IMBA_DEP** module (and therefore **DEP30.EXE**), a separate deposition module (**BNFL_DEP**) was developed independently at British Nuclear Fuels Limited (BNFL). The regional deposition fractions calculated with **BNFL_DEP** were compared against the corresponding values calculated with **IMBA_DEP** for a wide range of input parameter values. In all cases, the agreement was within ± 1% (Marsh et al 2002).

C.8. Dose Calculations for Intakes of Thorium-230

Section A.8.4.0.1 of **Appendix A: Technical Basis** noted that use of the "Speed" option for ^{230}Th dose calculations in IMBA Expert™ OCAS/ORAU-Edition yields closer approximations to the values calculated by **PLEIADES** (ICRP) assuming "independent" kinetics for the "in-growing" ^{226}Ra progeny than the "accuracy" option. The accuracy option explicitly calculates the ^{226}Ra "in-growth" – but applies "thorium" kinetics to ^{226}Ra and its subsequent progeny produced in systemic organs, whereas the speed option ignores the contributions to dose from the progeny. Table A.35 (of **Appendix A: Technical Basis**) gives the resulting maximum differences between the IMBA Expert™ OCAS/ORAU-Edition "Speed" option values and **PLEIADES** (ICRP). The tables in Sections C.8.1 through C.8.4 below show the comparative values for all target organs/tissues.

Maximum difference in ***Effective Dose***: **-0.70%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-1.02%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.39%**.

C.8.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.6362E-06	1.636E-06	0.01
URIN BLADDER	1.6363E-06	1.636E-06	0.02
BRAIN	1.6362E-06	1.636E-06	0.01
BREAST	1.6362E-06	1.636E-06	0.01
GALL BLADDER	1.6362E-06	N/A	N/A
HEART	1.6362E-06	N/A	N/A
KIDNEYS	2.2395E-05	2.240E-05	-0.02
LIVER	1.9227E-05	1.923E-05	-0.02
MUSCLE	1.6362E-06	1.636E-06	0.01
OVARIES	1.1951E-05	1.195E-05	0.01
PANCREAS	1.6362E-06	1.636E-06	0.01
TESTES	1.2176E-05	1.218E-05	-0.03
THYROID	1.6362E-06	1.636E-06	0.01
R.B.M.	5.1798E-05	5.182E-05	-0.04
BONE SURFACE	1.5043E-03	1.505E-03	-0.05
STOMACH	1.6366E-06	1.636E-06	0.04
S.I.	1.6373E-06	1.637E-06	0.02
U.L.I.	1.6432E-06	1.643E-06	0.01
L.L.I.	1.6567E-06	1.657E-06	-0.02
SKIN	1.6362E-06	1.636E-06	0.01
SPLEEN	1.6362E-06	1.641E-06	-0.29
THYMUS	1.6362E-06	1.636E-06	0.01
UTERUS	1.6362E-06	1.636E-06	0.01
ET	1.3827E-05	1.384E-05	-0.09
LUNG	1.7270E-05	1.730E-05	-0.17
COLON	1.6491E-06	1.649E-06	0.01
ET1	1.6671E-06	1.667E-06	0.01
ET2	1.3851E-05	1.387E-05	-0.14
LN(ET)	2.1520E-06	2.153E-06	-0.05
BBsec	3.7156E-05	3.724E-05	-0.23
BBbas	4.2769E-06	4.286E-06	-0.21
bb	2.2102E-05	2.206E-05	0.19
AI	9.0329E-06	9.041E-06	-0.09
LN(TH)	4.0414E-06	4.046E-06	-0.11
ESOPHAGUS	1.6362E-06	1.636E-06	0.01
REMAINDER	**1.8514E-06**	**1.851E-06**	**0.02**
C.E.D.	**2.7558E-05**	**2.757E-05**	**-0.04**
Maximum			**-0.29**

C.8.2. Acute Inhalation (Type S: f_1 = 0.0002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.4692E-07	1.469E-07	0.01
URIN BLADDER	1.4692E-07	1.469E-07	0.01
BRAIN	1.4692E-07	1.469E-07	0.01
BREAST	1.4692E-07	1.469E-07	0.01
GALL BLADDER	1.4691E-07	N/A	N/A
HEART	1.4692E-07	N/A	N/A
KIDNEYS	2.1183E-06	2.119E-06	-0.03
LIVER	1.7887E-06	1.789E-06	-0.02
MUSCLE	1.4692E-07	1.469E-07	0.01
OVARIES	1.1032E-06	1.104E-06	-0.07
PANCREAS	1.4692E-07	1.469E-07	0.01
TESTES	1.1240E-06	1.124E-06	0
THYROID	1.4691E-07	1.469E-07	0.01
R.B.M.	4.9433E-06	4.946E-06	-0.05
BONE SURFACE	1.3757E-04	1.376E-04	-0.02
STOMACH	1.4743E-07	1.474E-07	0.02
S.I.	1.4821E-07	1.482E-07	0.01
U.L.I.	1.5477E-07	1.547E-07	0.05
L.L.I.	1.6997E-07	1.699E-07	0.04
SKIN	1.4691E-07	1.469E-07	0.01
SPLEEN	1.4692E-07	1.475E-07	-0.39
THYMUS	1.4692E-07	1.469E-07	0.01
UTERUS	1.4691E-07	1.469E-07	0.01
ET	7.4077E-05	7.447E-05	-0.53
LUNG	3.9712E-05	4.012E-05	-1.02
COLON	1.6134E-07	1.613E-07	0.02
ET1	1.7859E-07	1.797E-07	-0.62
ET2	7.4097E-05	7.448E-05	-0.51
LN(ET)	1.2854E-04	1.345E-04	-4.43
BBsec	4.6396E-05	4.652E-05	-0.27
BBbas	4.5004E-06	4.519E-06	-0.41
bb	2.9495E-05	2.955E-05	-0.19
AI	6.2982E-05	6.393E-05	-1.48
LN(TH)	4.4314E-04	4.670E-04	-5.11
ESOPHAGUS	1.4692E-07	1.469E-07	0.01
REMAINDER	**2.0287E-07**	**2.031E-07**	**-0.11**
C.E.D.	**7.1266E-06**	**7.177E-06**	**-0.70**
Maximum			**-5.11**

C.8.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.3343E-08	1.334E-08	0.02
URIN BLADDER	1.3343E-08	1.334E-08	0.02
BRAIN	1.3343E-08	1.334E-08	0.02
BREAST	1.3342E-08	1.334E-08	0.01
GALL BLADDER	1.3343E-08	N/A	N/A
HEART	1.3342E-08	N/A	N/A
KIDNEYS	1.8225E-07	1.823E-07	-0.03
LIVER	1.5654E-07	1.566E-07	-0.04
MUSCLE	1.3343E-08	1.334E-08	0.02
OVARIES	9.7317E-08	9.733E-08	-0.01
PANCREAS	1.3343E-08	1.334E-08	0.02
TESTES	9.9148E-08	9.916E-08	-0.01
THYROID	1.3342E-08	1.334E-08	0.01
R.B.M.	4.2147E-07	4.216E-07	-0.03
BONE SURFACE	1.2255E-05	1.226E-05	-0.04
STOMACH	1.4436E-08	1.443E-08	0.04
S.I.	1.6076E-08	1.607E-08	0.04
U.L.I.	2.9888E-08	2.989E-08	-0.01
L.L.I.	6.1882E-08	6.188E-08	0
SKIN	1.3342E-08	1.334E-08	0.01
SPLEEN	1.3342E-08	1.338E-08	-0.28
THYMUS	1.3342E-08	1.334E-08	0.01
UTERUS	1.3343E-08	1.334E-08	0.02
ET	1.3342E-08	1.334E-08	0.01
LUNG	1.3342E-08	1.335E-08	-0.06
COLON	4.3723E-08	4.371E-08	0.03
ET1	1.3342E-08	1.334E-08	0.01
ET2	1.3342E-08	1.334E-08	0.01
LN(ET)	1.3342E-08	1.334E-08	0.01
BBsec	1.3342E-08	1.334E-08	0.01
BBbas	1.3342E-08	1.334E-08	0.01
bb	1.3342E-08	1.334E-08	0.01
AI	1.3342E-08	1.334E-08	0.01
LN(TH)	1.3342E-08	1.334E-08	0.01
ESOPHAGUS	1.3342E-08	1.334E-08	0.01
REMAINDER	**1.5102E-08**	**1.510E-08**	**0.01**
C.E.D.	**2.1292E-07**	**2.130E-07**	**-0.04**
Maximum			**-0.28**

C.8.4. Acute Ingestion (f_1 = 0.0002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.3370E-09	5.336E-09	0.02
URIN BLADDER	5.337E-09	5.34E-09	0.02
BRAIN	5.3370E-09	5.336E-09	0.02
BREAST	5.3369E-09	5.336E-09	0.02
GALL BLADDER	5.337E-09	N/A	N/A
HEART	5.3369E-09	N/A	N/A
KIDNEYS	7.2900E-08	7.291E-08	-0.01
LIVER	6.2615E-08	6.262E-08	-0.01
MUSCLE	5.3370E-09	5.336E-09	0.02
OVARIES	3.8928E-08	3.893E-08	-0.01
PANCREAS	5.3370E-09	5.336E-09	0.02
TESTES	3.9659E-08	3.966E-08	0
THYROID	5.3369E-09	5.336E-09	0.02
R.B.M.	1.6859E-07	1.686E-07	-0.01
BONE SURFACE	4.902E-06	4.90E-06	-0.02
STOMACH	6.4308E-09	6.430E-09	0.01
S.I.	8.0714E-09	8.070E-09	0.02
U.L.I.	2.1887E-08	2.189E-08	-0.01
L.L.I.	5.3890E-08	5.389E-08	0
SKIN	5.3369E-09	5.336E-09	0.02
SPLEEN	5.3369E-09	5.351E-09	-0.26
THYMUS	5.3369E-09	5.336E-09	0.02
UTERUS	5.3371E-09	5.336E-09	0.02
ET	5.3369E-09	5.336E-09	0.02
LUNG	5.3369E-09	5.341E-09	-0.08
COLON	3.5726E-08	3.571E-08	0.04
ET1	5.3369E-09	5.336E-09	0.02
ET2	5.3369E-09	5.336E-09	0.02
LN(ET)	5.3369E-09	5.336E-09	0.02
BBsec	5.3369E-09	5.336E-09	0.02
BBbas	5.3369E-09	5.336E-09	0.02
bb	5.3369E-09	5.336E-09	0.02
AI	5.3369E-09	5.336E-09	0.02
LN(TH)	5.3369E-09	5.336E-09	0.02
ESOPHAGUS	5.3369E-09	5.336E-09	0.02
REMAINDER	**6.0748E-09**	**6.074E-09**	**0.01**
C.E.D.	**8.7435E-08**	**8.745E-08**	**-0.02**
Maximum			**-0.26**

C.9. Practical Use of "Merged" Short-lived Progeny

As described in Section A.8.3.1 of **Appendix A: Technical Basis,** the "Speed" option is also available in IMBA Expert OCAS/ORAU-Edition for the following parent radionuclides which have short-lived initial progeny:

- ^{106}Ru;
- ^{137}Cs;
- ^{235}U;
- ^{238}U;
- ^{237}Np.

This option "merges" the disintegrations of the initial progeny with those of the parent.

Section A.8.3.1 of **Appendix A: Technical Basis** compares the resulting calculated doses per unit intake with the values of the "dose coefficient" calculated by **PLEIADES** (ICRP). However, the latter values are NOT directly useful in practical situations. Real-life exposure scenarios for these parent radionuclide always involve intake of an activity-equilibrium amount of the initial short-lived progeny. Therefore, the required doses per unit intake should INCLUDE intake of the activity-equilibrium amount of the initial short-lived progeny – with the same absorption type and f_1 value as the particle matrix that incorporates BOTH the parent radionuclide and its progeny. ICRP has not published these required "composite" dose conversion coefficients, and neither are these values available yet from **PLEIADES**.

For the initial progeny of ^{106}Ru, ^{137}Cs, and ^{237}Np, the combined effects of the "shared" kinetics assumed by IMBA Expert™ OCAS/ORAU-Edition and the slight reduction in doses due to the assumption of intake of the parent radionuclide only are negligible (see Tables A.29 and A.30 in **Appendix A**). However, for intakes of ^{235}U and ^{238}U, Tables A.31 and A.32 of **Appendix A** indicate a more substantial effect on some organ doses of the assumed intake of the parent radionuclide only. Accordingly, for proper quality assurance of ^{235}U and ^{238}U dose calculations, the committed equivalent doses to organs/tissues and effective doses calculated by IMBA

Expert™ OCAS/ORAU-Edition (with "merged" initial short-lived progeny) are compared below with the corresponding doses calculated by **PLEIADES** for intakes of these parent nuclides *together with activity-equilibrium amounts of their initial progeny*.

C.9.1. Dose Calculations for Intakes of $^{235}U/^{231}Th$

Sections C.9.1.1 through C.9.1.5 compare the 50-y committed equivalent tissue/organ doses and total effective dose (C.E.D.) calculated by IMBA Expert™ OCAS/ORAU-Edition (with "merged" initial short-lived progeny) with the corresponding values calculated by **PLEIADES** (in lieu of ICRP) for various types of intake of ^{235}U plus the activity-equilibrium amount of the initial short-lived progeny ^{231}Th. The results are summarized as follows:

- The maximum difference in ***Effective Dose*** is **-0.5%** (for inhalation of type "F" material or ingestion of material with $f_1 = 0.02$).
- The maximum difference in ***Equivalent Dose*** to an organ or tissue is **-2.1%** (for the **bone surface**; for inhalation of types "F" and "M" material).
- The committed equivalent doses for all other organs/tissues that are calculated by IMBA Expert™ OCAS/ORAU-Edition (with "merged" disintegrations of ^{231}Th) are accurate to within ± 1%.
- In order to calculate the bone surface dose to within ± 1% accuracy, it would be necessary to treat the additional intake of ^{231}Th as that of an **Associated Radionuclide**, and thus assign automatically the thorium biokinetic model to represent accurately its behavior in systemic organs/tissues.

Key Practical Note: For intakes of $^{235}U/^{231}Th$, the "Accuracy" dose calculation option in IMBA Expert™ OCAS/ORAU-Edition should NOT be used – unless ^{231}Th can be added as an **Associated Radionuclide**. "Merging" the ^{231}Th disintegrations with those of the parent ^{235}U (by selecting the "Speed" option) gives essentially the same calculated doses – with significantly shorter calculation time. The calculated bone surface dose is about 2% lower than the corresponding "ICRP" value for both options. ^{231}Th is not currently implemented as either an "Indicator" or "Associated" radionuclide in IMBA Expert™ OCAS/ORAU-Edition (Version 4.0).

C.9.1.1. Acute Inhalation (Type F: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.58E-07	3.58E-07	-0.1
URIN BLADDER	3.59E-07	3.59E-07	0.0
BRAIN	3.57E-07	3.58E-07	-0.3
BREAST	3.57E-07	3.57E-07	-0.1
GALL BLADDER	3.57E-07	N/A	N/A
HEART	3.57E-07	N/A	N/A
KIDNEYS	3.72E-06	3.72E-06	0.0
LIVER	1.39E-06	1.40E-06	-0.4
MUSCLE	3.57E-07	3.58E-07	-0.2
OVARIES	3.57E-07	3.59E-07	-0.5
PANCREAS	3.57E-07	3.58E-07	-0.3
TESTES	3.57E-07	3.59E-07	-0.4
THYROID	3.57E-07	3.58E-07	-0.2
R.B.M.	1.07E-06	1.07E-06	-0.3
BONE SURFACE	1.03E-05	1.05E-05	**-2.1**
STOMACH	3.57E-07	3.58E-07	-0.3
S.I.	3.58E-07	3.59E-07	-0.2
U.L.I.	3.61E-07	3.62E-07	-0.2
L.L.I.	3.69E-07	3.69E-07	0.0
SKIN	3.57E-07	3.58E-07	-0.1
SPLEEN	3.57E-07	3.58E-07	-0.2
THYMUS	3.57E-07	3.58E-07	-0.2
UTERUS	3.57E-07	3.58E-07	-0.2
ET	3.63E-07	3.64E-07	-0.2
LUNG	3.66E-07	3.67E-07	-0.4
COLON	3.64E-07	3.65E-07	-0.3
ET1	1.83E-06	1.84E-06	-0.3
ET2	3.62E-07	3.62E-07	0.0
LN(ET)	3.61E-07	3.61E-07	0.0
BBsec	3.78E-07	3.78E-07	-0.1
BBbas	3.58E-07	3.58E-07	-0.1
bb	3.74E-07	3.74E-07	0.0
AI	3.58E-07	3.58E-07	-0.1
LN(TH)	3.57E-07	3.58E-07	-0.2
ESOPHAGUS	3.57E-07	N/A	N/A
REMAINDER	**3.91E-07**	**3.92E-07**	**-0.2**
C.E.D.	**5.98E-07**	**6.01E-07**	**-0.5**
Maximum			**-2.1**

C.9.1.2. Acute Inhalation (Type M: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.75E-08	8.76E-08	-0.1
URIN BLADDER	8.75E-08	8.76E-08	-0.1
BRAIN	8.72E-08	8.73E-08	-0.2
BREAST	8.72E-08	8.74E-08	-0.2
GALL BLADDER	8.72E-08	N/A	N/A
HEART	8.75E-08	N/A	N/A
KIDNEYS	9.10E-07	9.11E-07	-0.1
LIVER	3.41E-07	3.42E-07	-0.1
MUSCLE	8.72E-08	8.74E-08	-0.2
OVARIES	8.73E-08	8.76E-08	-0.3
PANCREAS	8.73E-08	8.75E-08	-0.2
TESTES	8.71E-08	8.75E-08	-0.4
THYROID	8.72E-08	8.74E-08	-0.2
R.B.M.	2.62E-07	2.62E-07	-0.2
BONE SURFACE	2.52E-06	2.57E-06	**-2.1**
STOMACH	8.77E-08	8.79E-08	-0.2
S.I.	8.86E-08	8.87E-08	-0.1
U.L.I.	9.52E-08	9.53E-08	-0.1
L.L.I.	1.11E-07	1.11E-07	0.3
SKIN	8.71E-08	8.72E-08	-0.2
SPLEEN	8.73E-08	8.74E-08	-0.1
THYMUS	8.73E-08	8.75E-08	-0.2
UTERUS	8.72E-08	8.73E-08	-0.2
ET	1.15E-05	1.15E-05	-0.2
LUNG	1.40E-05	1.40E-05	0.1
COLON	1.02E-07	1.02E-07	0.0
ET1	1.56E-06	1.57E-06	-0.3
ET2	1.15E-05	1.15E-05	-0.4
LN(ET)	5.77E-07	5.77E-07	-0.1
BBsec	2.89E-05	2.89E-05	-0.1
BBbas	2.28E-06	2.29E-06	-0.4
bb	1.93E-05	1.93E-05	0.2
AI	7.06E-06	7.06E-06	0.0
LN(TH)	2.35E-06	2.36E-06	-0.2
ESOPHAGUS	8.73E-08	N/A	N/A
REMAINDER	**1.01E-07**	**1.02E-07**	**-1.1**
C.E.D.	**1.81E-06**	**1.82E-06**	**-0.3**
Maximum			**-2.1**

C.9.1.3. Acute Inhalation (Type S: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.66E-09	9.68E-09	-0.2
URIN BLADDER	8.15E-09	8.16E-09	-0.1
BRAIN	8.16E-09	8.17E-09	-0.2
BREAST	9.61E-09	9.62E-09	-0.1
GALL BLADDER	8.59E-09	N/A	N/A
HEART	1.11E-08	N/A	N/A
KIDNEYS	9.46E-08	9.48E-08	-0.2
LIVER	3.55E-08	3.56E-08	-0.2
MUSCLE	8.80E-09	8.82E-09	-0.2
OVARIES	8.22E-09	8.25E-09	-0.4
PANCREAS	9.19E-09	9.20E-09	-0.1
TESTES	8.07E-09	8.11E-09	-0.5
THYROID	8.66E-09	8.67E-09	-0.1
R.B.M.	2.69E-08	2.70E-08	-0.3
BONE SURFACE	2.53E-07	2.57E-07	**-1.6**
STOMACH	9.47E-09	9.49E-09	-0.2
S.I.	9.75E-09	9.77E-09	-0.2
U.L.I.	1.74E-08	1.74E-08	0.0
L.L.I.	3.49E-08	3.49E-08	-0.1
SKIN	8.35E-09	8.36E-09	-0.1
SPLEEN	9.17E-09	9.19E-09	-0.2
THYMUS	9.99E-09	1.00E-08	-0.1
UTERUS	8.15E-09	8.16E-09	-0.1
ET	6.93E-05	6.93E-05	0.0
LUNG	3.60E-05	3.61E-05	-0.1
COLON	2.50E-08	2.50E-08	0.1
ET1	1.50E-06	1.50E-06	-0.2
ET2	6.93E-05	6.93E-05	0.0
LN(ET)	1.21E-04	1.21E-04	-0.1
BBsec	3.74E-05	3.75E-05	-0.3
BBbas	3.63E-06	3.64E-06	-0.2
bb	2.72E-05	2.71E-05	0.4
AI	5.93E-05	5.93E-05	0.0
LN(TH)	4.17E-04	4.17E-04	-0.1
ESOPHAGUS	9.99E-09	N/A	N/A
REMAINDER	**3.47E-05**	**3.47E-05**	**0.1**
C.E.D.	**6.07E-06**	**6.07E-06**	**-0.1**
Maximum			**-1.6**

C.9.1.4. Acute Ingestion (f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.51E-08	2.52E-08	-0.2
URIN BLADDER	2.52E-08	2.52E-08	-0.2
BRAIN	2.51E-08	2.51E-08	0.0
BREAST	2.50E-08	2.51E-08	-0.3
GALL BLADDER	2.51E-08	N/A	N/A
HEART	2.51E-08	N/A	N/A
KIDNEYS	2.61E-07	2.61E-07	0.0
LIVER	9.77E-08	9.79E-08	-0.2
MUSCLE	2.51E-08	2.51E-08	-0.1
OVARIES	2.53E-08	2.54E-08	-0.3
PANCREAS	2.51E-08	2.51E-08	-0.2
TESTES	2.51E-08	2.52E-08	-0.3
THYROID	2.51E-08	2.51E-08	0.0
R.B.M.	7.52E-08	7.53E-08	-0.1
BONE SURFACE	7.24E-07	7.38E-07	**-1.9**
STOMACH	2.64E-08	2.64E-08	0.0
S.I.	2.84E-08	2.84E-08	0.0
U.L.I.	4.41E-08	4.41E-08	-0.1
L.L.I.	8.06E-08	8.06E-08	0.0
SKIN	2.50E-08	2.51E-08	-0.3
SPLEEN	2.51E-08	2.51E-08	0.0
THYMUS	2.51E-08	2.51E-08	0.0
UTERUS	2.52E-08	2.52E-08	0.0
ET	2.51E-08	2.51E-08	0.0
LUNG	2.51E-08	2.51E-08	-0.1
COLON	5.99E-08	5.99E-08	0.0
ET1	2.51E-08	2.51E-08	0.0
ET2	2.51E-08	2.51E-08	0.0
LN(ET)	2.51E-08	2.51E-08	0.0
BBsec	2.51E-08	2.51E-08	0.0
BBbas	2.51E-08	2.51E-08	0.0
bb	2.51E-08	2.51E-08	0.0
AI	2.51E-08	2.51E-08	0.0
LN(TH)	2.51E-08	2.51E-08	0.0
ESOPHAGUS	2.51E-08	N/A	N/A
REMAINDER	**2.75E-08**	**2.76E-08**	**-0.3**
C.E.D.	**4.62E-08**	**4.64E-08**	**-0.5**
Maximum			**-1.9**

C.9.1.5. Acute Ingestion (f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.52E-09	2.53E-09	-0.2
URIN BLADDER	2.58E-09	2.59E-09	-0.3
BRAIN	2.51E-09	2.51E-09	0.0
BREAST	2.50E-09	2.51E-09	-0.3
GALL BLADDER	2.57E-09	N/A	N/A
EART	2.51E-09	N/A	N/A
KIDNEYS	2.61E-08	2.61E-08	-0.1
LIVER	9.79E-09	9.80E-09	-0.1
MUSCLE	2.53E-09	2.53E-09	-0.1
OVARIES	2.73E-09	2.74E-09	-0.4
PANCREAS	2.53E-09	2.53E-09	-0.2
TESTES	2.52E-09	2.53E-09	-0.5
THYROID	2.51E-09	2.51E-09	0.0
R.B.M.	7.55E-09	7.56E-09	-0.2
BONE SURFACE	7.24E-08	7.38E-08	**-2.0**
STOMACH	3.83E-09	3.83E-09	0.0
S.I.	5.85E-09	5.86E-09	-0.2
U.L.I.	2.19E-08	2.19E-08	0.0
L.L.I.	5.90E-08	5.90E-08	0.0
SKIN	2.51E-09	2.51E-09	-0.2
SPLEEN	2.52E-09	2.53E-09	-0.3
THYMUS	2.51E-09	2.51E-09	0.0
UTERUS	2.60E-09	2.61E-09	-0.2
ET	2.51E-09	2.51E-09	0.0
LUNG	2.51E-09	2.52E-09	-0.2
COLON	3.79E-08	3.79E-08	-0.1
ET1	2.51E-09	2.51E-09	0.0
ET2	2.51E-09	2.51E-09	0.0
LN(ET)	2.51E-09	2.51E-09	0.0
BBsec	2.51E-09	2.51E-09	-0.1
BBbas	2.51E-09	2.51E-09	-0.1
bb	2.51E-09	2.51E-09	-0.1
AI	2.51E-09	2.51E-09	-0.1
LN(TH)	2.51E-09	2.51E-09	-0.1
ESOPHAGUS	2.51E-09	N/A	N/A
REMAINDER	**2.84E-09**	**2.84E-09**	**0.0**
C.E.D.	**8.65E-09**	**8.67E-09**	**-0.2**
Maximum			**-2.0**

C.9.2. Dose Calculations for Intakes of $^{238}U/^{234}Th/^{234m}Pa/^{234}Pa$

Sections C.9.2.1 through C.9.2.5 compare the 50-y committed equivalent tissue/organ doses and total effective dose (C.E.D.) calculated by IMBA Expert™ OCAS/ORAU-Edition (with "merged" initial short-lived progeny) with the corresponding values calculated by **PLEIADES** (in lieu of ICRP) for various types of intake of ^{238}U plus the activity-equilibrium amount of the initial short-lived progeny radionuclides ^{234}Th, ^{234}Pa and ^{234m}Pa. The results are summarized as follows:

- The maximum difference in ***Effective Dose*** is **-1.8%** (for ingestion of material with f_1 = 0.02).
- The maximum difference in ***Equivalent Dose*** to an organ or tissue is **-3.9%** (for the **colon**; for ingestion of material with f_1 = 0.002).

- The maximum difference for organs/tissues *other than the GI tract* is **-2.2%** (for the **bone surface**; for ingestion of material with f_1 = 0.02).

- In order to improve the accuracy of doses calculated for systemic organs, it would be necessary to treat the additional intakes of ^{234}Th, ^{234}Pa and ^{234m}Pa as those of **Associated Radionuclides**, and thus assign automatically the "ICRP-assumed" biokinetic models to represent accurately the assumed behavior of these progeny in systemic organs/tissues.[(1)]

Key Practical Note: For intakes of $^{238}U/^{234}Th/^{234}Pa/^{234m}Pa$, the "Accuracy" dose calculation option in IMBA Expert™ OCAS/ORAU-Edition should NOT be used – unless $^{234}Th/^{234}Pa/^{234m}Pa$ can be added as an **Associated Radionuclides**. "Merging" the disintegrations of these progeny with those of the parent ^{238}U (by selecting the "Speed" option) gives a reasonable approximation of the doses resulting from intake of ^{238}U together with its initial short-lived progeny. The calculated bone surface dose is about 2% lower than the corresponding "ICRP" value for both options. However, merging the progeny disintegrations gives a reasonably accurate "emulation" of doses to the GI tract, of which about 50% arises from the accompanying progeny.

(1) ^{234}Th, ^{234}Pa and ^{234m}Pa are not currently implemented as either "Indicator" or "Associated" radionuclides in IMBA Expert™ OCAS/ORAU-Edition (Version 4.0).

C.9.2.1. Acute Inhalation (Type F: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.43E-07	3.44E-07	-0.3
URIN BLADDER	3.45E-07	3.45E-07	0.0
BRAIN	3.43E-07	3.44E-07	-0.2
BREAST	3.43E-07	3.44E-07	-0.2
GALL BLADDER	3.43E-07	N/A	N/A
HEART	3.43E-07	N/A	N/A
KIDNEYS	3.57E-06	3.57E-06	-0.1
LIVER	1.34E-06	1.34E-06	-0.3
MUSCLE	3.43E-07	3.44E-07	-0.2
OVARIES	3.43E-07	3.45E-07	-0.7
PANCREAS	3.43E-07	3.44E-07	-0.2
TESTES	3.43E-07	3.46E-07	-0.8
THYROID	3.43E-07	3.44E-07	-0.2
R.B.M.	1.05E-06	1.07E-06	-2.0
BONE SURFACE	9.93E-06	1.01E-05	-2.1
STOMACH	3.43E-07	3.44E-07	-0.4
S.I.	3.44E-07	3.45E-07	-0.3
U.L.I.	3.49E-07	3.50E-07	-0.4
L.L.I.	3.60E-07	3.62E-07	-0.5
SKIN	3.43E-07	3.44E-07	-0.2
SPLEEN	3.43E-07	3.44E-07	-0.2
THYMUS	3.43E-07	3.44E-07	-0.2
UTERUS	3.43E-07	3.44E-07	-0.2
ET	3.47E-07	3.55E-07	**-2.2**
LUNG	3.51E-07	3.52E-07	-0.3
COLON	3.54E-07	3.55E-07	-0.4
ET1	2.78E-06	4.02E-06	-30.9
ET2	3.45E-07	3.51E-07	-1.7
LN(ET)	3.43E-07	3.49E-07	-1.8
BBsec	3.59E-07	3.60E-07	-0.2
BBbas	3.43E-07	3.44E-07	-0.4
bb	3.58E-07	3.59E-07	-0.3
AI	3.43E-07	3.44E-07	-0.4
LN(TH)	3.43E-07	3.44E-07	-0.2
ESOPHAGUS	3.43E-07	N/A	N/A
REMAINDER	**3.75E-07**	**3.80E-07**	**-1.3**
C.E.D.	**5.78E-07**	**5.84E-07**	**-1.0**
Maximum			**-2.2**

C.9.2.2. Acute Inhalation (Type M: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.37E-08	8.39E-08	-0.3
URIN BLADDER	8.42E-08	8.42E-08	0.0
BRAIN	8.36E-08	8.39E-08	-0.3
BREAST	8.37E-08	8.39E-08	-0.2
GALL BLADDER	8.37E-08	N/A	N/A
HEART	8.37E-08	N/A	N/A
KIDNEYS	8.74E-07	8.75E-07	-0.1
LIVER	3.28E-07	3.29E-07	-0.3
MUSCLE	8.37E-08	8.39E-08	-0.2
OVARIES	8.37E-08	8.44E-08	-0.8
PANCREAS	8.37E-08	8.39E-08	-0.3
TESTES	8.36E-08	8.43E-08	-0.9
THYROID	8.36E-08	8.39E-08	-0.3
R.B.M.	2.58E-07	2.62E-07	-1.5
BONE SURFACE	2.43E-06	2.48E-06	**-2.0**
STOMACH	8.45E-08	8.50E-08	-0.6
S.I.	8.57E-08	8.64E-08	-0.8
U.L.I.	9.61E-08	9.75E-08	-1.4
L.L.I.	1.20E-07	1.21E-07	-1.0
SKIN	8.36E-08	8.39E-08	-0.3
SPLEEN	8.37E-08	8.39E-08	-0.2
THYMUS	8.37E-08	8.39E-08	-0.3
UTERUS	8.36E-08	8.39E-08	-0.4
ET	1.08E-05	1.08E-05	0.1
LUNG	1.27E-05	1.27E-05	0.2
COLON	1.06E-07	1.08E-07	-1.6
ET1	2.52E-06	3.76E-06	-33.1
ET2	1.08E-05	1.08E-05	-0.1
LN(ET)	5.52E-07	5.57E-07	-0.9
BBsec	2.41E-05	2.42E-05	-0.4
BBbas	1.97E-06	1.97E-06	-0.2
bb	1.82E-05	1.81E-05	0.3
AI	6.79E-06	6.79E-06	0.0
LN(TH)	2.25E-06	2.25E-06	-0.2
ESOPHAGUS	8.37E-08	N/A	N/A
REMAINDER	**9.69E-08**	**1.01E-07**	**-4.0**
C.E.D.	**1.65E-06**	**1.66E-06**	**-0.4**
Maximum			**-2.0**

C.9.2.3. Acute Inhalation (Type S: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.02E-09	8.02E-09	0.0
URIN BLADDER	7.81E-09	7.84E-09	-0.4
BRAIN	7.76E-09	7.80E-09	-0.5
BREAST	8.03E-09	8.02E-09	0.1
GALL BLADDER	7.84E-09	N/A	N/A
HEART	8.27E-09	N/A	N/A
KIDNEYS	9.06E-08	9.07E-08	-0.1
LIVER	3.30E-08	3.32E-08	-0.5
MUSCLE	7.88E-09	7.91E-09	-0.4
OVARIES	7.77E-09	7.97E-09	-2.5
PANCREAS	7.94E-09	7.98E-09	-0.4
TESTES	7.75E-09	7.83E-09	-1.0
THYROID	7.85E-09	7.88E-09	-0.3
R.B.M.	2.59E-08	2.63E-08	-1.7
BONE SURFACE	2.42E-07	2.47E-07	-2.1
STOMACH	8.84E-09	9.14E-09	-3.3
S.I.	1.01E-08	1.07E-08	-5.4
U.L.I.	2.21E-08	2.33E-08	-5.3
L.L.I.	4.97E-08	5.07E-08	-1.9
SKIN	7.80E-09	7.83E-09	-0.3
SPLEEN	7.95E-09	7.97E-09	-0.2
THYMUS	8.09E-09	8.08E-09	0.1
UTERUS	7.76E-09	7.86E-09	-1.2
ET	6.49E-05	6.49E-05	0.0
LUNG	3.38E-05	3.38E-05	0.0
COLON	3.40E-08	3.51E-08	**-3.2**
ET1	2.44E-06	3.69E-06	-33.9
ET2	6.49E-05	6.49E-05	0.0
LN(ET)	1.16E-04	1.17E-04	-0.4
BBsec	3.15E-05	3.16E-05	-0.3
BBbas	3.39E-06	3.40E-06	-0.3
bb	2.58E-05	2.58E-05	0.2
AI	5.70E-05	5.70E-05	0.0
LN(TH)	4.00E-04	4.00E-04	0.0
ESOPHAGUS	8.09E-09	N/A	N/A
REMAINDER	**3.25E-05**	**3.25E-05**	**0.1**
C.E.D.	**5.69E-06**	**5.70E-06**	**-0.1**
Maximum			**-3.2**

C.9.2.4. Acute Ingestion (f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.41E-08	2.42E-08	-0.3
URIN BLADDER	2.42E-08	2.43E-08	-0.4
BRAIN	2.41E-08	2.41E-08	-0.1
BREAST	2.40E-08	2.41E-08	-0.5
GALL BLADDER	2.41E-08	N/A	N/A
HEART	2.41E-08	N/A	N/A
KIDNEYS	2.51E-07	2.51E-07	0.1
LIVER	9.39E-08	9.43E-08	-0.5
MUSCLE	2.41E-08	2.42E-08	-0.3
OVARIES	2.41E-08	2.46E-08	-2.0
PANCREAS	2.41E-08	2.42E-08	-0.5
TESTES	2.41E-08	2.43E-08	-0.7
THYROID	2.41E-08	2.41E-08	-0.1
R.B.M.	7.40E-08	7.52E-08	-1.6
BONE SURFACE	6.96E-07	7.12E-07	-2.2
STOMACH	2.61E-08	2.69E-08	-2.9
S.I.	2.90E-08	3.03E-08	-4.4
U.L.I.	5.37E-08	5.68E-08	-5.4
L.L.I.	1.11E-07	1.13E-07	-2.0
SKIN	2.41E-08	2.41E-08	-0.1
SPLEEN	2.41E-08	2.42E-08	-0.3
THYMUS	2.41E-08	2.41E-08	-0.1
UTERUS	2.41E-08	2.43E-08	-0.9
ET	2.41E-08	2.41E-08	-0.1
LUNG	2.41E-08	2.41E-08	-0.2
COLON	7.85E-08	8.12E-08	-3.3
ET1	2.41E-08	2.41E-08	-0.1
ET2	2.41E-08	2.41E-08	-0.1
LN(ET)	2.41E-08	2.41E-08	-0.1
BBsec	2.41E-08	2.41E-08	-0.1
BBbas	2.41E-08	2.41E-08	-0.1
bb	2.41E-08	2.41E-08	-0.1
AI	2.41E-08	2.41E-08	-0.1
LN(TH)	2.41E-08	2.41E-08	-0.1
ESOPHAGUS	2.41E-08	N/A	N/A
REMAINDER	**2.64E-08**	**2.66E-08**	**-0.7**
C.E.D.	**4.72E-08**	**4.81E-08**	**-1.8**
Maximum			**-3.3**

C.9.2.5. Acute Ingestion (f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.41E-08	2.41E-08	-0.2
URIN BLADDER	2.42E-08	2.43E-08	-0.3
BRAIN	2.41E-08	2.41E-08	0.0
BREAST	2.40E-08	2.41E-08	-0.4
GALL BLADDER	2.41E-08	N/A	N/A
HEART	2.41E-08	N/A	N/A
KIDNEYS	2.51E-07	2.50E-07	0.3
LIVER	9.39E-08	9.41E-08	-0.2
MUSCLE	2.41E-08	2.41E-08	-0.2
OVARIES	2.41E-08	2.45E-08	-1.8
PANCREAS	2.41E-08	2.42E-08	-0.4
TESTES	2.41E-08	2.42E-08	-0.4
THYROID	2.41E-08	2.41E-08	0.0
R.B.M.	7.40E-08	7.43E-08	-0.4
BONE SURFACE	6.96E-07	7.10E-07	-2.0
STOMACH	2.61E-08	2.69E-08	-2.8
S.I.	2.90E-08	3.04E-08	-4.5
U.L.I.	5.37E-08	5.71E-08	-5.9
L.L.I.	1.11E-07	1.14E-07	-2.7
SKIN	2.41E-08	2.41E-08	0.0
SPLEEN	2.41E-08	2.42E-08	-0.2
THYMUS	2.41E-08	2.41E-08	0.0
UTERUS	2.41E-08	2.43E-08	-0.8
ET	2.41E-08	2.41E-08	0.0
LUNG	2.41E-08	2.41E-08	-0.1
COLON	7.85E-08	8.17E-08	**-3.9**
ET1	2.41E-08	2.41E-08	0.0
ET2	2.41E-08	2.41E-08	0.0
LN(ET)	2.41E-08	2.41E-08	0.0
BBsec	2.41E-08	2.41E-08	0.0
BBbas	2.41E-08	2.41E-08	0.0
bb	2.41E-08	2.41E-08	0.0
AI	2.41E-08	2.41E-08	0.0
LN(TH)	2.41E-08	2.41E-08	0.0
ESOPHAGUS	2.41E-08	N/A	N/A
REMAINDER	**2.64E-08**	**2.66E-08**	**-0.6**
C.E.D.	**4.72E-08**	**4.80E-08**	**-1.6**
Maximum			**-3.9**

C.10. Listing of Committed Dose Benchmarks

Sections C.10.1 through C.10.112 tabulate all calculated dose coefficients (committed doses per unit intake), by radionuclide (for actinium-227 through zirconium-95).

Note #1: The tabulated values from **PLEIADES** were calculated to 4 significant figures.

Note #2: In these tables, the committed equivalent dose to an organ or tissue is referred to as an "ORGAN" dose.

C.10.1. ^{227}Ac – Actinium-227

Maximum difference in ***Effective Dose***: **-0.07%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.44%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.07%**.

C.10.1.1. Acute Inhalation (Type F: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.4252E-07	1.4250E-07	0.01
URIN BLADDER	2.1744E-08	2.1750E-08	-0.03
BRAIN	2.8999E-08	2.9000E-08	0.00
BREAST	2.8992E-08	2.9000E-08	-0.03
GALL BLADDER	2.0876E-07	N/A	N/A
HEART	7.2863E-08	N/A	N/A
KIDNEYS	9.5023E-08	9.5030E-08	-0.01
LIVER	4.2570E-03	4.2560E-03	0.02
MUSCLE	3.9991E-08	3.9990E-08	0.00
OVARIES	2.2920E-04	2.2920E-04	0.00
PANCREAS	1.0894E-07	1.0900E-07	-0.06
TESTES	2.2943E-04	2.2940E-04	0.01
THYROID	2.3596E-08	2.3600E-08	-0.02
R.B.M.	1.5146E-03	1.5150E-03	-0.03
BONE SURFACE	1.8893E-02	1.8890E-02	0.02
STOMACH	4.9143E-08	4.9150E-08	-0.01
S.I.	5.7080E-08	5.7080E-08	0.00
U.L.I.	7.1609E-08	7.1630E-08	-0.03
L.L.I.	5.3750E-08	5.3790E-08	-0.07
SKIN	2.2892E-08	2.2890E-08	0.01
SPLEEN	3.5501E-08	3.5500E-08	0.00
THYMUS	3.1890E-08	3.1890E-08	0.00
UTERUS	3.3688E-08	3.3690E-08	-0.01
ET	5.3003E-08	5.2990E-08	0.02
LUNG	6.8376E-08	6.8450E-08	-0.11
COLON	6.3886E-08	6.3920E-08	-0.05
ET1	2.9318E-05	2.9300E-05	0.06
ET2	2.3708E-08	2.3710E-08	-0.01
LN(ET)	2.3693E-08	2.3700E-08	-0.03
BBsec	6.8726E-08	6.8730E-08	-0.01
BBbas	6.8207E-08	6.8210E-08	0.00
bb	6.8455E-08	6.8460E-08	-0.01
AI	6.8207E-08	6.8210E-08	0.00
LN(TH)	6.8197E-08	6.8200E-08	0.00
ESOPHAGUS	3.1890E-08	3.1890E-08	0.00
REMAINDER	**4.0630E-08**	**4.0640E-08**	**-0.02**
C.E.D.	**6.2945E-04**	**6.2940E-04**	**0.01**
Maximum			**-0.11**

C.10.1.2. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.2478E-08	3.2480E-08	-0.01
URIN BLADDER	5.9367E-09	5.9370E-09	-0.01
BRAIN	7.4779E-09	7.4790E-09	-0.01
BREAST	7.7659E-09	7.7670E-09	-0.01
GALL BLADDER	4.6708E-08	N/A	N/A
HEART	1.7566E-08	N/A	N/A
KIDNEYS	2.1929E-08	2.1930E-08	0.00
LIVER	9.2710E-04	9.2700E-04	0.01
MUSCLE	9.9829E-09	9.9840E-09	-0.01
OVARIES	4.9846E-05	4.9840E-05	0.01
PANCREAS	2.5089E-08	2.5090E-08	0.00
TESTES	4.9894E-05	4.9890E-05	0.01
THYROID	6.4017E-09	6.4020E-09	0.00
R.B.M.	3.2956E-04	3.2960E-04	-0.01
BONE SURFACE	4.1110E-03	4.1120E-03	-0.02
STOMACH	1.2122E-08	1.2120E-08	0.02
S.I.	1.3917E-08	1.3920E-08	-0.02
U.L.I.	1.9038E-08	1.9040E-08	-0.01
L.L.I.	2.0840E-08	2.0850E-08	-0.05
SKIN	6.1928E-09	6.1930E-09	0.00
SPLEEN	9.0881E-09	9.0890E-09	-0.01
THYMUS	8.4611E-09	8.4620E-09	-0.01
UTERUS	8.4971E-09	8.4980E-09	-0.01
ET	5.6444E-05	5.6460E-05	-0.03
LUNG	6.8725E-05	6.8890E-05	-0.24
COLON	1.9817E-08	1.9820E-08	-0.02
ET1	2.9302E-05	2.9280E-05	0.08
ET2	5.6525E-05	5.6540E-05	-0.03
LN(ET)	3.3704E-06	3.3710E-06	-0.02
BBsec	1.7820E-04	1.7860E-04	-0.22
BBbas	5.8625E-05	5.8740E-05	-0.20
bb	4.9004E-05	4.8900E-05	0.21
AI	3.8920E-05	3.8920E-05	0.00
LN(TH)	1.5392E-05	1.5390E-05	0.01

ESOPHAGUS	8.4611E-09	8.4620E-09	-0.01
REMAINDER	**3.7641E-08**	**3.7670E-08**	**-0.08**
C.E.D.	**1.4525E-04**	**1.4530E-04**	**-0.03**
Maximum			**-0.24**

C.10.1.3. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.6299E-09	5.6310E-09	-0.02
URIN BLADDER	6.6986E-10	6.6990E-10	-0.01
BRAIN	9.1926E-10	9.1930E-10	0.00
BREAST	3.5618E-09	3.5620E-09	-0.01
GALL BLADDER	5.0016E-09	N/A	N/A
HEART	6.6843E-09	N/A	N/A
KIDNEYS	2.7994E-09	2.8000E-09	-0.02
LIVER	7.9322E-05	7.9310E-05	0.02
MUSCLE	2.1369E-09	2.1370E-09	0.00
OVARIES	4.1901E-06	4.1900E-06	0.00
PANCREAS	4.2502E-09	4.2510E-09	-0.02
TESTES	4.1940E-06	4.1940E-06	0.00
THYROID	1.7395E-09	1.7400E-09	-0.03
R.B.M.	2.7918E-05	2.7920E-05	-0.01
BONE SURFACE	3.4824E-04	3.4830E-04	-0.02
STOMACH	2.8769E-09	2.8770E-09	0.00
S.I.	2.4176E-09	2.4180E-09	-0.02
U.L.I.	7.7111E-09	7.7120E-09	-0.01
L.L.I.	2.0181E-08	2.0180E-08	0.00
SKIN	1.1810E-09	1.1810E-09	0.00
SPLEEN	2.7983E-09	2.7990E-09	-0.03
THYMUS	4.2418E-09	4.2420E-09	0.00
UTERUS	9.2792E-10	9.2800E-10	-0.01
ET	3.8473E-04	3.8480E-04	-0.02
LUNG	2.1774E-04	2.1800E-04	-0.12
COLON	1.3103E-08	1.3100E-08	0.02
ET1	2.9310E-05	2.9290E-05	0.07
ET2	3.8495E-04	3.8510E-04	-0.04
LN(ET)	5.1501E-04	5.1500E-04	0.00
BBsec	2.6614E-04	2.6670E-04	-0.21
BBbas	9.2311E-05	9.2500E-05	-0.20
bb	1.1884E-04	1.1870E-04	0.12
AI	3.5093E-04	3.5090E-04	0.01
LN(TH)	1.6250E-03	1.6250E-03	0.00
ESOPHAGUS	4.2418E-09	4.2420E-09	0.00
REMAINDER	**1.9237E-04**	**1.9240E-04**	**-0.02**
C.E.D.	**4.7387E-05**	**4.7420E-05**	**-0.07**
Maximum			**-0.21**

C.10.1.4. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.5376E-10	2.5380E-10	-0.02
URIN BLADDER	4.1868E-11	4.1870E-11	0.00
BRAIN	5.1603E-11	5.1610E-11	-0.01
BREAST	5.1633E-11	5.1640E-11	-0.01
GALL BLADDER	3.7287E-10	N/A	N/A
HEART	1.2970E-10	N/A	N/A
KIDNEYS	1.6981E-10	1.6980E-10	0.01
LIVER	7.5698E-06	7.5680E-06	0.02
MUSCLE	7.2087E-11	7.2090E-11	0.00
OVARIES	4.0758E-07	4.0750E-07	0.02
PANCREAS	1.9434E-10	1.9440E-10	-0.03
TESTES	4.0796E-07	4.0790E-07	0.01
THYROID	4.2000E-11	4.2000E-11	0.00
R.B.M.	2.6931E-06	2.6930E-06	0.00
BONE SURFACE	3.3594E-05	3.3600E-05	-0.02
STOMACH	1.2916E-10	1.2920E-10	-0.03
S.I.	2.3891E-10	2.3890E-10	0.00
U.L.I.	1.4970E-09	1.4970E-09	0.00
L.L.I.	7.6207E-09	7.6190E-09	0.02
SKIN	4.1029E-11	4.1030E-11	0.00
SPLEEN	6.3715E-11	6.3720E-11	-0.01
THYMUS	5.6776E-11	5.6780E-11	-0.01
UTERUS	6.3700E-11	6.3700E-11	0.00
ET	4.2000E-11	4.2000E-11	0.00
LUNG	1.2138E-10	1.2150E-10	-0.10
COLON	4.1451E-09	4.1420E-09	0.07
ET1	4.2000E-11	4.2000E-11	0.00
ET2	4.2000E-11	4.2000E-11	0.00
LN(ET)	4.2000E-11	4.2000E-11	0.00
BBsec	1.2138E-10	1.2140E-10	-0.02
BBbas	1.2138E-10	1.2140E-10	-0.02
bb	1.2138E-10	1.2140E-10	-0.02
AI	1.2138E-10	1.2140E-10	-0.02
LN(TH)	1.2138E-10	1.2140E-10	-0.02
ESOPHAGUS	5.6776E-11	5.6780E-11	-0.01
REMAINDER	**7.5995E-11**	**7.6010E-11**	**-0.02**
C.E.D.	**1.1197E-06**	**1.1200E-06**	**-0.03**
Maximum			**-0.10**

C.10.2. ^{228}Ac – Actinium-228

Maximum difference in ***Effective Dose***: **-0.16%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.59%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **±0.06%**.

C.10.2.1. Acute Inhalation (Type F: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.4946E-11	4.4950E-11	-0.01
URIN BLADDER	3.6964E-11	3.6970E-11	-0.02
BRAIN	2.2451E-11	2.2450E-11	0.00
BREAST	1.8446E-11	1.8450E-11	-0.02
GALL BLADDER	7.0025E-11	N/A	N/A
HEART	3.0270E-11	N/A	N/A
KIDNEYS	3.7629E-11	3.7630E-11	0.00
LIVER	2.1897E-07	2.1890E-07	0.03
MUSCLE	2.8394E-11	2.8390E-11	0.01
OVARIES	9.2183E-09	9.2170E-09	0.01
PANCREAS	4.2511E-11	4.2510E-11	0.00
TESTES	9.1914E-09	9.1900E-09	0.02
THYROID	2.2411E-11	2.2410E-11	0.00
R.B.M.	6.7421E-08	6.7430E-08	-0.01

BONE SURFACE	8.4068E-07	8.4070E-07	0.00
STOMACH	1.4200E-10	1.4200E-10	0.00
S.I.	2.2811E-10	2.2810E-10	0.00
U.L.I.	5.2431E-10	5.2430E-10	0.00
L.L.I.	4.0546E-10	4.0540E-10	0.01
SKIN	1.8004E-11	1.8000E-11	0.02
SPLEEN	2.4216E-11	2.4220E-11	-0.02
THYMUS	2.6526E-11	2.6520E-11	0.02
UTERUS	3.5539E-11	3.5540E-11	0.00
ET	3.4090E-09	3.4090E-09	0.00
LUNG	6.3525E-11	6.3680E-11	-0.24
COLON	4.7291E-10	4.7300E-10	-0.02
ET1	8.1084E-07	8.1060E-07	0.03
ET2	2.6011E-09	2.6010E-09	0.00
LN(ET)	2.2024E-09	2.2020E-09	0.02
BBsec	1.2338E-10	1.2360E-10	-0.18
BBbas	9.9076E-11	9.9220E-11	-0.15
bb	4.6471E-11	4.6440E-11	0.07
AI	3.2977E-11	3.2980E-11	-0.01
LN(TH)	2.9931E-11	2.9930E-11	0.00
ESOPHAGUS	2.6526E-11	2.6520E-11	0.02
REMAINDER	**3.4067E-11**	**3.4070E-11**	**-0.01**
C.E.D.	**2.9378E-08**	**2.9380E-08**	**-0.01**
Maximum			**-0.24**

C.10.2.2. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.8376E-11	1.8380E-11	-0.02
URIN BLADDER	1.9316E-11	1.9320E-11	-0.02
BRAIN	1.1018E-11	1.1020E-11	-0.02
BREAST	1.0292E-11	1.0290E-11	0.02
GALL BLADDER	4.1622E-11	N/A	N/A
HEART	1.7129E-11	N/A	N/A
KIDNEYS	2.0753E-11	2.0750E-11	0.01
LIVER	4.4661E-08	4.4660E-08	0.00
MUSCLE	1.9266E-11	1.9270E-11	-0.02
OVARIES	1.9317E-09	1.9310E-09	0.04
PANCREAS	2.6161E-11	2.6160E-11	0.00
TESTES	1.8773E-09	1.8770E-09	0.02
THYROID	1.2281E-11	1.2280E-11	0.01
R.B.M.	1.3763E-08	1.3760E-08	0.02
BONE SURFACE	1.7145E-07	1.7150E-07	-0.03
STOMACH	2.3876E-10	2.3880E-10	-0.02
S.I.	3.9866E-10	3.9870E-10	-0.01
U.L.I.	9.1965E-10	9.1970E-10	-0.01
L.L.I.	7.1336E-10	7.1340E-10	-0.01
SKIN	9.3204E-12	9.3200E-12	0.00
SPLEEN	1.7751E-11	1.7750E-11	0.01
THYMUS	1.7609E-11	1.7610E-11	-0.01
UTERUS	3.7348E-11	3.7350E-11	-0.01
ET	2.5446E-08	2.5450E-08	-0.02
LUNG	4.8863E-08	4.8990E-08	-0.26
COLON	8.3044E-10	8.3060E-10	-0.02
ET1	8.1087E-07	8.1070E-07	0.02
ET2	2.4681E-08	2.4690E-08	-0.04
LN(ET)	3.1647E-09	3.1650E-09	-0.01
BBsec	1.4072E-07	1.4100E-07	-0.20
BBbas	4.6749E-08	4.6850E-08	-0.22
bb	3.7427E-08	3.7340E-08	0.23
AI	1.5563E-08	1.5560E-08	0.02
LN(TH)	4.6847E-09	4.6850E-09	-0.01
ESOPHAGUS	1.7609E-11	1.7610E-11	-0.01
REMAINDER	**3.9258E-11**	**3.9280E-11**	**-0.06**
C.E.D.	**1.1982E-08**	**1.2000E-08**	**-0.15**
Maximum			**-0.26**

C.10.2.3. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.3546E-11	1.3550E-11	-0.03
URIN BLADDER	1.6520E-11	1.6520E-11	0.00
BRAIN	8.8749E-12	8.8740E-12	0.01
BREAST	9.3958E-12	9.3960E-12	0.00
GALL BLADDER	3.4951E-11	N/A	N/A
HEART	1.5733E-11	N/A	N/A
KIDNEYS	1.7144E-11	1.7140E-11	0.02
LIVER	2.0684E-09	2.0680E-09	0.02
MUSCLE	1.7501E-11	1.7500E-11	0.01
OVARIES	1.4867E-10	1.4870E-10	-0.02
PANCREAS	2.2787E-11	2.2790E-11	-0.01
TESTES	9.0516E-11	9.0500E-11	0.02
THYROID	1.0699E-11	1.0700E-11	-0.01
R.B.M.	6.5186E-10	6.5190E-10	-0.01
BONE SURFACE	7.8980E-09	7.8990E-09	-0.01
STOMACH	2.4863E-10	2.4870E-10	-0.03
S.I.	4.1622E-10	4.1620E-10	0.00
U.L.I.	9.6226E-10	9.6230E-10	0.00
L.L.I.	7.4795E-10	7.4800E-10	-0.01
SKIN	7.6627E-12	7.6630E-12	0.00
SPLEEN	1.6638E-11	1.6640E-11	-0.01
THYMUS	1.6786E-11	1.6790E-11	-0.02
UTERUS	3.6536E-11	3.6540E-11	-0.01
ET	8.5872E-08	8.5890E-08	-0.02
LUNG	8.0298E-08	8.0470E-08	-0.21
COLON	8.6959E-10	8.6970E-10	-0.01
ET1	8.1088E-07	8.1070E-07	0.02
ET2	8.5210E-08	8.5230E-08	-0.02
LN(ET)	2.1137E-08	2.1140E-08	-0.01
BBsec	1.8639E-07	1.8680E-07	-0.22
BBbas	6.3699E-08	6.3830E-08	-0.21
bb	5.6314E-08	5.6200E-08	0.20
AI	5.9613E-08	5.9610E-08	0.01
LN(TH)	5.3370E-08	5.3370E-08	0.00
ESOPHAGUS	1.6786E-11	1.6790E-11	-0.02
REMAINDER	**4.2949E-08**	**4.2960E-08**	**-0.03**
C.E.D.	**1.2210E-08**	**1.2230E-08**	**-0.16**
Maximum			**-0.22**

C.10.2.4. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.9332E-11	1.9330E-11	0.01
URIN BLADDER	4.0672E-11	4.0670E-11	0.00
BRAIN	1.5843E-13	1.5840E-13	0.02
BREAST	4.3180E-12	4.3180E-12	0.00
GALL BLADDER	8.1334E-11	N/A	N/A
HEART	1.0355E-11	N/A	N/A
KIDNEYS	3.7020E-11	3.7020E-11	0.00
LIVER	4.1552E-10	4.1540E-10	0.03
MUSCLE	2.2069E-11	2.2070E-11	0.00
OVARIES	1.7210E-10	1.7210E-10	0.00
PANCREAS	4.6052E-11	4.6050E-11	0.00
TESTES	2.7148E-11	2.7140E-11	0.03
THYROID	6.8614E-13	6.8610E-13	0.01
R.B.M.	1.5169E-10	1.5170E-10	-0.01
BONE SURFACE	1.5090E-09	1.5090E-09	0.00

STOMACH	6.1412E-10	6.1410E-10	0.00	ET2	6.8614E-13	6.8610E-13	0.01
S.I.	1.0394E-09	1.0390E-09	0.04	LN(ET)	6.8614E-13	6.8610E-13	0.01
U.L.I.	2.4018E-09	2.4020E-09	-0.01	BBsec	6.4026E-12	6.4030E-12	-0.01
L.L.I.	1.8562E-09	1.8560E-09	0.01	BBbas	6.4026E-12	6.4030E-12	-0.01
SKIN	8.4934E-12	8.4940E-12	-0.01	bb	6.4026E-12	6.4030E-12	-0.01
SPLEEN	3.0983E-11	3.0980E-11	0.01	AI	6.4026E-12	6.4030E-12	-0.01
THYMUS	3.0984E-12	3.0980E-12	0.01	LN(TH)	6.4026E-12	6.4030E-12	-0.01
UTERUS	9.0433E-11	9.0430E-11	0.00	ESOPHAGUS	3.0984E-12	3.0980E-12	0.01
ET	6.8614E-13	6.8610E-13	0.01	**REMAINDER**	**4.2674E-11**	**4.2700E-11**	**-0.06**
LUNG	6.4026E-12	6.4090E-12	-0.10	**C.E.D.**	**4.2752E-10**	**4.2750E-10**	**0.00**
COLON	2.1659E-09	2.1660E-09	0.00	**Maximum**			**-0.10**
ET1	6.8614E-13	6.8610E-13	0.01				

C.10.3. ^{110m}Ag – Silver-110m

Maximum difference in ***Effective Dose***: **+0.07%** (Ingestion).
Maximum difference in ***Organ Dose***: **+0.16%** (Ingestion – Colon).
Maximum difference excluding ***Respiratory Tract***: **+0.16%**.

C.10.3.1. Acute Inhalation (Type F: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.7605E-09	9.7610E-09	-0.01
URIN BLADDER	3.2496E-09	3.2490E-09	0.02
BRAIN	2.0593E-09	2.0590E-09	0.01
BREAST	3.1366E-09	3.1360E-09	0.02
GALL BLADDER	1.6349E-08	N/A	N/A
HEART	6.1500E-09	N/A	N/A
KIDNEYS	7.3563E-09	7.3560E-09	0.00
LIVER	4.2405E-08	4.2380E-08	0.06
MUSCLE	3.7387E-09	3.7380E-09	0.02
OVARIES	4.7427E-09	4.7420E-09	0.01
PANCREAS	8.6327E-09	8.6330E-09	0.00
TESTES	2.4443E-09	2.4440E-09	0.01
THYROID	2.7253E-09	2.7250E-09	0.01
R.B.M.	4.2068E-09	4.2060E-09	0.02
BONE SURFACE	3.8080E-09	3.8070E-09	0.03
STOMACH	5.1336E-09	5.1330E-09	0.01
S.I.	5.6536E-09	5.6530E-09	0.01
U.L.I.	7.8030E-09	7.8000E-09	0.04
L.L.I.	7.5573E-09	7.5490E-09	0.11
SKIN	2.4798E-09	2.4790E-09	0.03
SPLEEN	3.9645E-09	3.9640E-09	0.01
THYMUS	3.5706E-09	3.5700E-09	0.02
UTERUS	4.0450E-09	4.0450E-09	0.00
ET	2.4155E-08	2.4150E-08	0.02
LUNG	5.4554E-09	5.4610E-09	-0.10
COLON	7.6967E-09	7.6920E-09	0.06
ET1	6.1559E-07	6.1500E-07	0.10
ET2	2.3563E-08	2.3560E-08	0.01
LN(ET)	2.3454E-08	2.3450E-08	0.02
BBsec	5.4720E-09	5.4720E-09	0.00
BBbas	5.4649E-09	5.4650E-09	0.00
bb	5.4506E-09	5.4510E-09	-0.01
AI	5.4471E-09	5.4470E-09	0.00
LN(TH)	5.4465E-09	5.4460E-09	0.01
ESOPHAGUS	3.5706E-09	3.5700E-09	0.02
REMAINDER	**3.7692E-09**	**3.7690E-09**	**0.01**
C.E.D.	**6.6533E-09**	**6.6520E-09**	**0.02**
Maximum			**0.11**

C.10.3.2. Acute Inhalation (Type M: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.2019E-09	4.2020E-09	0.00
URIN BLADDER	1.1582E-09	1.1580E-09	0.02
BRAIN	7.1039E-10	7.1020E-10	0.03
BREAST	2.6659E-09	2.6660E-09	0.00
GALL BLADDER	4.9492E-09	N/A	N/A
HEART	4.6686E-09	N/A	N/A
KIDNEYS	2.5720E-09	2.5720E-09	0.00
LIVER	1.2104E-08	1.2100E-08	0.03
MUSCLE	1.8273E-09	1.8270E-09	0.02
OVARIES	2.2777E-09	2.2780E-09	-0.01
PANCREAS	3.5075E-09	3.5080E-09	-0.01
TESTES	7.2507E-10	7.2490E-10	0.02
THYROID	1.4638E-09	1.4640E-09	-0.01
R.B.M.	2.1875E-09	2.1870E-09	0.02
BONE SURFACE	1.7628E-09	1.7630E-09	-0.01
STOMACH	2.4926E-09	2.4920E-09	0.02
S.I.	2.5279E-09	2.5280E-09	0.00
U.L.I.	3.9972E-09	3.9940E-09	0.08
L.L.I.	5.8011E-09	5.7930E-09	0.14
SKIN	1.0772E-09	1.0770E-09	0.02
SPLEEN	2.3272E-09	2.3270E-09	0.01
THYMUS	3.1088E-09	3.1090E-09	-0.01
UTERUS	1.5230E-09	1.5230E-09	0.00
ET	2.6884E-08	2.6880E-08	0.01
LUNG	2.0967E-08	2.0990E-08	-0.11
COLON	4.7773E-09	4.7710E-09	0.13
ET1	6.1587E-07	6.1530E-07	0.09
ET2	2.6296E-08	2.6290E-08	0.02
LN(ET)	2.3948E-08	2.3950E-08	-0.01
BBsec	3.4115E-08	3.4130E-08	-0.04
BBbas	2.7591E-08	2.7600E-08	-0.03
bb	1.7341E-08	1.7310E-08	0.18
AI	1.4737E-08	1.4720E-08	0.12
LN(TH)	1.0480E-08	1.0480E-08	0.00
ESOPHAGUS	3.1088E-09	3.1090E-09	-0.01
REMAINDER	**1.4346E-08**	**1.4340E-08**	**0.04**
C.E.D.	**5.8772E-09**	**5.8780E-09**	**-0.01**
Maximum			**0.18**

C.10.3.3. Acute Inhalation (Type S: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.9284E-09	4.9290E-09	-0.01
URIN BLADDER	7.2512E-10	7.2510E-10	0.00
BRAIN	5.6688E-10	5.6680E-10	0.01
BREAST	4.6965E-09	4.6970E-09	-0.01
GALL BLADDER	3.0893E-09	N/A	N/A
HEART	7.8968E-09	N/A	N/A
KIDNEYS	2.1966E-09	2.1970E-09	-0.02
LIVER	7.0350E-09	7.0330E-09	0.03
MUSCLE	2.2406E-09	2.2410E-09	-0.02
OVARIES	1.7909E-09	1.7910E-09	-0.01
PANCREAS	3.7823E-09	3.7820E-09	0.01
TESTES	3.5790E-10	3.5780E-10	0.03
THYROID	2.0146E-09	2.0150E-09	-0.02
R.B.M.	2.7930E-09	2.7930E-09	0.00
BONE SURFACE	2.1040E-09	2.1040E-09	0.00
STOMACH	2.9259E-09	2.9260E-09	0.00
S.I.	2.0028E-09	2.0020E-09	0.04
U.L.I.	3.3043E-09	3.3020E-09	0.07
L.L.I.	5.3202E-09	5.3120E-09	0.15
SKIN	1.2158E-09	1.2160E-09	-0.02
SPLEEN	3.3889E-09	3.3890E-09	0.00
THYMUS	5.4723E-09	5.4730E-09	-0.01
UTERUS	1.0302E-09	1.0300E-09	0.02
ET	3.3825E-08	3.3820E-08	0.01
LUNG	3.8385E-08	3.8400E-08	-0.04
COLON	4.1760E-09	4.1700E-09	0.14
ET1	6.1927E-07	6.1870E-07	0.09
ET2	3.3244E-08	3.3240E-08	0.01
LN(ET)	2.8576E-08	2.8570E-08	0.02
BBsec	5.2827E-08	5.2840E-08	-0.02
BBbas	4.4561E-08	4.4550E-08	0.02
bb	3.4043E-08	3.3980E-08	0.19
AI	3.2462E-08	3.2420E-08	0.13
LN(TH)	2.3336E-08	2.3330E-08	0.03
ESOPHAGUS	5.4723E-09	5.4730E-09	-0.01
REMAINDER	**2.1863E-09**	**2.1840E-09**	**0.11**
C.E.D.	**7.2915E-09**	**7.2920E-09**	**-0.01**
Maximum			**0.19**

C.10.3.4. Acute Ingestion (f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.8354E-09	1.8350E-09	0.02
URIN BLADDER	1.3733E-09	1.3730E-09	0.02
BRAIN	3.4013E-10	3.4000E-10	0.04
BREAST	5.7030E-10	5.7020E-10	0.02
GALL BLADDER	3.5441E-09	N/A	N/A
HEART	1.1259E-09	N/A	N/A
KIDNEYS	1.6174E-09	1.6170E-09	0.02
LIVER	7.5204E-09	7.5160E-09	0.06
MUSCLE	9.3929E-10	9.3920E-10	0.01
OVARIES	3.4627E-09	3.4620E-09	0.02
PANCREAS	1.7998E-09	1.8000E-09	-0.01
TESTES	6.8203E-10	6.8190E-10	0.02
THYROID	4.6005E-10	4.5990E-10	0.03
R.B.M.	1.2003E-09	1.2000E-09	0.03
BONE SURFACE	8.5332E-10	8.5320E-10	0.01
STOMACH	1.7052E-09	1.7050E-09	0.01
S.I.	3.4391E-09	3.4380E-09	0.03
U.L.I.	6.2147E-09	6.2080E-09	0.11
L.L.I.	1.1447E-08	1.1430E-08	0.15
SKIN	5.3800E-10	5.3790E-10	0.02
SPLEEN	9.2833E-10	9.2820E-10	0.01
THYMUS	6.2324E-10	6.2310E-10	0.02
UTERUS	1.8533E-09	1.8530E-09	0.02
ET	4.6005E-10	4.5990E-10	0.03
LUNG	9.7771E-10	9.7860E-10	-0.09
COLON	8.4775E-09	8.4640E-09	0.16
ET1	4.6005E-10	4.5990E-10	0.03
ET2	4.6005E-10	4.5990E-10	0.03
LN(ET)	4.6005E-10	4.5990E-10	0.03
BBsec	9.7771E-10	9.7760E-10	0.01
BBbas	9.7771E-10	9.7760E-10	0.01
bb	9.7771E-10	9.7760E-10	0.01
AI	9.7771E-10	9.7760E-10	0.01
LN(TH)	9.7771E-10	9.7760E-10	0.01
ESOPHAGUS	6.2324E-10	6.2310E-10	0.02
REMAINDER	**9.7595E-10**	**9.7600E-10**	**-0.01**
C.E.D.	**2.7659E-09**	**2.7640E-09**	**0.07**
Maximum			**0.16**

C.10.4. ^{241}Am – Americium-241

Maximum difference in ***Effective Dose***: **+0.19%** (Ingestion).
Maximum difference in ***Organ Dose***: **+0.21%** (Ingestion – Spleen).
Maximum difference excluding ***Respiratory Tract***: **+0.21%**.

C.10.4.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.8473E-06	1.8440E-06	0.18
URIN BLADDER	1.8458E-06	1.8430E-06	0.15
BRAIN	1.8466E-06	1.8430E-06	0.20
BREAST	1.8458E-06	1.8430E-06	0.15
GALL BLADDER	1.8475E-06	N/A	N/A
HEART	1.8463E-06	N/A	N/A
KIDNEYS	5.5945E-06	5.5950E-06	-0.01
LIVER	6.6943E-05	6.6950E-05	-0.01
MUSCLE	1.8462E-06	1.8430E-06	0.17
OVARIES	2.1176E-05	2.1170E-05	0.03
PANCREAS	1.8466E-06	1.8430E-06	0.20
TESTES	2.1011E-05	2.1000E-05	0.05
THYROID	1.8460E-06	1.8430E-06	0.16
R.B.M.	3.7627E-05	3.7630E-05	-0.01
BONE SURFACE	1.1069E-03	1.1080E-03	-0.10
STOMACH	1.8465E-06	1.8430E-06	0.19
S.I.	1.8476E-06	1.8440E-06	0.20
U.L.I.	1.8548E-06	1.8520E-06	0.15
L.L.I.	1.8715E-06	1.8680E-06	0.19
SKIN	1.8457E-06	1.8430E-06	0.15
SPLEEN	1.8460E-06	1.8430E-06	0.16

THYMUS	1.8460E-06	1.8430E-06	0.16
UTERUS	1.8459E-06	1.8430E-06	0.16
ET	1.5473E-05	1.5470E-05	0.02
LUNG	2.3713E-05	2.3750E-05	-0.16
COLON	1.8620E-06	1.8590E-06	0.16
ET1	3.0249E-05	3.0240E-05	0.03
ET2	1.5471E-05	1.5470E-05	0.01
LN(ET)	2.4517E-06	2.4490E-06	0.11
BBsec	6.3630E-05	6.3760E-05	-0.20
BBbas	7.9892E-06	7.9990E-06	-0.12
bb	2.4868E-05	2.4810E-05	0.23
AI	1.0519E-05	1.0520E-05	-0.01
LN(TH)	4.6651E-06	4.6630E-06	0.05
ESOPHAGUS	1.8460E-06	1.8430E-06	0.16
REMAINDER	**1.8907E-06**	**1.8880E-06**	**0.14**
C.E.D.	**2.6939E-05**	**2.6950E-05**	**-0.04**
Maximum			**0.23**

C.10.4.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.5080E-08	1.5050E-08	0.20
URIN BLADDER	1.5079E-08	1.5050E-08	0.19
BRAIN	1.5073E-08	1.5050E-08	0.15
BREAST	1.5067E-08	1.5040E-08	0.18
GALL BLADDER	1.5093E-08	N/A	N/A
HEART	1.5071E-08	N/A	N/A
KIDNEYS	4.5505E-08	4.5500E-08	0.01
LIVER	5.4446E-07	5.4450E-07	-0.01
MUSCLE	1.5074E-08	1.5050E-08	0.16
OVARIES	1.7244E-07	1.7230E-07	0.08
PANCREAS	1.5077E-08	1.5050E-08	0.18
TESTES	1.7104E-07	1.7100E-07	0.02
THYROID	1.5069E-08	1.5040E-08	0.19
R.B.M.	3.0606E-07	3.0610E-07	-0.01
BONE SURFACE	9.0146E-06	9.0200E-06	-0.06
STOMACH	1.6405E-08	1.6380E-08	0.15
S.I.	1.8426E-08	1.8400E-08	0.14
U.L.I.	3.5195E-08	3.5170E-08	0.07
L.L.I.	7.4012E-08	7.3980E-08	0.04
SKIN	1.5067E-08	1.5040E-08	0.18
SPLEEN	1.5071E-08	1.5040E-08	0.21
THYMUS	1.5068E-08	1.5040E-08	0.19
UTERUS	1.5086E-08	1.5060E-08	0.17
ET	1.5069E-08	1.5040E-08	0.19
LUNG	1.5073E-08	1.5060E-08	0.09
COLON	5.1981E-08	5.1940E-08	0.08
ET1	1.5069E-08	1.5040E-08	0.19
ET2	1.5069E-08	1.5040E-08	0.19
LN(ET)	1.5069E-08	1.5040E-08	0.19
BBsec	1.5073E-08	1.5050E-08	0.15
BBbas	1.5073E-08	1.5050E-08	0.15
bb	1.5073E-08	1.5050E-08	0.15
AI	1.5073E-08	1.5050E-08	0.15
LN(TH)	1.5073E-08	1.5050E-08	0.15
ESOPHAGUS	1.5068E-08	1.5040E-08	0.19
REMAINDER	**1.5080E-08**	**1.5050E-08**	**0.20**
C.E.D.	**1.5079E-08**	**1.5050E-08**	**0.19**
Maximum			**0.21**

C.10.5. ^{243}Am – Americium-243

Maximum difference in ***Effective Dose***: **-0.05%** (Inhalation).
Maximum difference in ***Organ Dose***: **+0.21%** (Ingestion – Muscle).
Maximum difference excluding ***Respiratory Tract***: **+0.21%**.

C.10.5.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.8712E-06	1.8680E-06	0.17
URIN BLADDER	1.8596E-06	1.8560E-06	0.19
BRAIN	1.8636E-06	1.8600E-06	0.19
BREAST	1.8588E-06	1.8560E-06	0.15
GALL BLADDER	1.8710E-06	N/A	N/A
HEART	1.8637E-06	N/A	N/A
KIDNEYS	5.5172E-06	5.5180E-06	-0.01
LIVER	6.5885E-05	6.5900E-05	-0.02
MUSCLE	1.8621E-06	1.8590E-06	0.17
OVARIES	2.1086E-05	2.1070E-05	0.08
PANCREAS	1.8666E-06	1.8630E-06	0.19
TESTES	2.0917E-05	2.0910E-05	0.03
THYROID	1.8614E-06	1.8580E-06	0.18
R.B.M.	3.7171E-05	3.7180E-05	-0.02
BONE SURFACE	1.1027E-03	1.1030E-03	-0.03
STOMACH	1.8615E-06	1.8580E-06	0.19
S.I.	1.8646E-06	1.8610E-06	0.19
U.L.I.	1.8717E-06	1.8680E-06	0.20
L.L.I.	1.8893E-06	1.8860E-06	0.17
SKIN	1.8589E-06	1.8560E-06	0.16
SPLEEN	1.8610E-06	1.8580E-06	0.16
THYMUS	1.8606E-06	1.8570E-06	0.19
UTERUS	1.8614E-06	1.8580E-06	0.18
ET	1.5207E-05	1.5210E-05	-0.02
LUNG	2.1860E-05	2.1890E-05	-0.14
COLON	1.8793E-06	1.8760E-06	0.18
ET1	7.4943E-06	7.4900E-06	0.06
ET2	1.5228E-05	1.5230E-05	-0.01
LN(ET)	2.4461E-06	2.4430E-06	0.13
BBsec	5.5989E-05	5.6100E-05	-0.20
BBbas	6.0932E-06	6.0990E-06	-0.10
bb	2.4364E-05	2.4310E-05	0.22
AI	1.0228E-05	1.0230E-05	-0.02
LN(TH)	4.5815E-06	4.5790E-06	0.05
ESOPHAGUS	1.8606E-06	1.8570E-06	0.19
REMAINDER	**1.9056E-06**	**1.9020E-06**	**0.19**
C.E.D.	**2.6557E-05**	**2.6570E-05**	**-0.05**
Maximum			**0.22**

C.10.5.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.5275E-08	1.5250E-08	0.16
URIN BLADDER	1.5226E-08	1.5200E-08	0.17

BRAIN	1.5210E-08	1.5180E-08	0.20
BREAST	1.5169E-08	1.5140E-08	0.19
GALL BLADDER	1.5305E-08	N/A	N/A
HEART	1.5208E-08	N/A	N/A
KIDNEYS	4.4873E-08	4.4870E-08	0.01
LIVER	5.3571E-07	5.3570E-07	0.00
MUSCLE	1.5212E-08	1.5180E-08	0.21
OVARIES	1.7176E-07	1.7160E-07	0.09
PANCREAS	1.5245E-08	1.5220E-08	0.16
TESTES	1.7024E-07	1.7020E-07	0.02
THYROID	1.5191E-08	1.5160E-08	0.20
R.B.M.	3.0229E-07	3.0230E-07	0.00
BONE SURFACE	8.9781E-06	8.9830E-06	-0.05
STOMACH	1.6461E-08	1.6430E-08	0.19
S.I.	1.8472E-08	1.8440E-08	0.17
U.L.I.	3.4999E-08	3.4970E-08	0.08
L.L.I.	7.5620E-08	7.5590E-08	0.04
SKIN	1.5175E-08	1.5150E-08	0.17
SPLEEN	1.5198E-08	1.5170E-08	0.18
THYMUS	1.5183E-08	1.5160E-08	0.15
UTERUS	1.5256E-08	1.5230E-08	0.17
ET	1.5191E-08	1.5160E-08	0.20
LUNG	1.5212E-08	1.5200E-08	0.08
COLON	5.2565E-08	5.2520E-08	0.09
ET1	1.5191E-08	1.5160E-08	0.20
ET2	1.5191E-08	1.5160E-08	0.20
LN(ET)	1.5191E-08	1.5160E-08	0.20
BBsec	1.5212E-08	1.5180E-08	0.21
BBbas	1.5212E-08	1.5180E-08	0.21
bb	1.5212E-08	1.5180E-08	0.21
AI	1.5212E-08	1.5180E-08	0.21
LN(TH)	1.5212E-08	1.5180E-08	0.21
ESOPHAGUS	1.5183E-08	1.5160E-08	0.15
REMAINDER	**1.5579E-08**	**1.5550E-08**	**0.19**
C.E.D.	**2.0127E-07**	**2.0130E-07**	**-0.01**
Maximum			**0.21**

C.10.6. ^{74}As – Arsenic-74

Maximum difference in ***Effective Dose***: **-0.19%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.37%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.08%**.

C.10.6.1. Acute Inhalation (Type M: f_1 = 0.4999)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.67E-10	2.67E-10	0.01
URIN BLADDER	3.34E-10	3.34E-10	0.00
BRAIN	1.21E-10	1.21E-10	0.07
BREAST	2.23E-10	2.23E-10	0.01
GALL BLADDER	2.50E-10	N/A	N/A
HEART	3.39E-10	N/A	N/A
KIDNEYS	4.40E-10	4.40E-10	-0.02
LIVER	4.61E-10	4.61E-10	-0.02
MUSCLE	1.96E-10	1.96E-10	0.01
OVARIES	3.55E-10	3.55E-10	0.01
PANCREAS	2.51E-10	2.51E-10	0.00
TESTES	1.23E-10	1.23E-10	0.07
THYROID	1.74E-10	1.74E-10	0.04
R.B.M.	2.28E-10	2.28E-10	0.03
BONE SURFACE	1.92E-10	1.92E-10	0.02
STOMACH	3.69E-10	3.69E-10	0.01
S.I.	4.81E-10	4.81E-10	0.02
U.L.I.	1.81E-09	1.81E-09	-0.01
L.L.I.	4.54E-09	4.54E-09	0.00
SKIN	1.26E-10	1.26E-10	0.07
SPLEEN	3.45E-10	3.45E-10	-0.02
THYMUS	2.76E-10	2.76E-10	0.03
UTERUS	2.25E-10	2.25E-10	0.03
ET	8.36E-09	8.36E-09	0.00
LUNG	1.03E-08	1.03E-08	-0.37
COLON	2.99E-09	2.99E-09	0.06
ET1	1.18E-06	1.18E-06	-0.01
ET2	7.18E-09	7.18E-09	0.01
LN(ET)	6.08E-09	6.08E-09	0.01
BBsec	2.24E-08	2.25E-08	-0.17
BBbas	1.98E-08	1.99E-08	-0.21
bb	5.65E-09	5.65E-09	0.08
AI	4.01E-09	4.01E-09	0.00
LN(TH)	8.14E-10	8.14E-10	0.00
ESOPHAGUS	2.76E-10	2.76E-10	0.03
REMAINDER	**2.06E-10**	**2.06E-10**	**0.05**
C.E.D.	**1.82E-09**	**1.82E-09**	**-0.19**
Maximum			**-0.37**

C.10.6.2. Acute Ingestion (f_1 = 0.4999)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.11E-10	3.11E-10	0.04
URIN BLADDER	7.22E-10	7.22E-10	0.00
BRAIN	1.91E-10	1.91E-10	0.08
BREAST	1.92E-10	1.92E-10	0.06
GALL BLADDER	4.59E-10	N/A	N/A
HEART	2.46E-10	N/A	N/A
KIDNEYS	8.57E-10	8.57E-10	-0.01
LIVER	7.68E-10	7.68E-10	-0.02
MUSCLE	2.77E-10	2.77E-10	0.04
OVARIES	7.99E-10	7.99E-10	0.03
PANCREAS	3.51E-10	3.50E-10	0.03
TESTES	2.65E-10	2.65E-10	0.04
THYROID	2.16E-10	2.16E-10	0.06
R.B.M.	3.31E-10	3.31E-10	0.05
BONE SURFACE	2.76E-10	2.76E-10	0.03
STOMACH	7.18E-10	7.18E-10	0.01
S.I.	1.10E-09	1.10E-09	0.03
U.L.I.	4.21E-09	4.21E-09	0.00
L.L.I.	1.07E-08	1.07E-08	0.01
SKIN	1.99E-10	1.99E-10	0.05
SPLEEN	5.57E-10	5.57E-10	-0.01
THYMUS	2.21E-10	2.20E-10	0.07
UTERUS	4.94E-10	4.94E-10	0.04
ET	2.16E-10	2.16E-10	0.06

LUNG	2.31E-10	2.32E-10	-0.06
COLON	7.01E-09	7.01E-09	0.04
ET1	2.16E-10	2.16E-10	0.06
ET2	2.16E-10	2.16E-10	0.06
LN(ET)	2.16E-10	2.16E-10	0.06
BBsec	2.31E-10	2.31E-10	0.06
BBbas	2.31E-10	2.31E-10	0.06
bb	2.31E-10	2.31E-10	0.06
AI	2.31E-10	2.31E-10	0.06
LN(TH)	2.31E-10	2.31E-10	0.06
ESOPHAGUS	2.21E-10	2.20E-10	0.07
REMAINDER	**2.99E-10**	**2.99E-10**	**0.01**
C.E.D.	**1.28E-09**	**1.28E-09**	**0.02**
Maximum			**+0.08**

C.10.7. ^{133}Ba – Barium-133

Maximum difference in ***Effective Dose***: **+0.02%** (Ingestion).
Maximum difference in ***Organ Dose***: **-0.13%** (Ingestion – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.08%**.

C.10.7.1. Acute Inhalation (Type F: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.75E-09	1.75E-09	-0.05
URIN BLADDER	7.61E-10	7.61E-10	-0.02
BRAIN	1.29E-09	1.29E-09	-0.03
BREAST	5.59E-10	5.59E-10	-0.04
GALL BLADDER	8.71E-10	N/A	N/A
HEART	8.82E-10	N/A	N/A
KIDNEYS	1.17E-09	1.17E-09	-0.01
LIVER	7.97E-10	7.98E-10	-0.04
MUSCLE	9.86E-10	9.86E-10	-0.03
OVARIES	1.50E-09	1.50E-09	-0.03
PANCREAS	1.10E-09	1.10E-09	-0.04
TESTES	5.36E-10	5.37E-10	-0.03
THYROID	9.29E-10	9.30E-10	-0.03
R.B.M.	5.52E-09	5.52E-09	-0.02
BONE SURFACE	9.62E-09	9.62E-09	-0.01
STOMACH	7.34E-10	7.35E-10	-0.03
S.I.	1.33E-09	1.33E-09	0.00
U.L.I.	1.69E-09	1.70E-09	-0.03
L.L.I.	3.14E-09	3.14E-09	-0.03
SKIN	6.44E-10	6.45E-10	-0.02
SPLEEN	8.08E-10	8.09E-10	-0.03
THYMUS	7.79E-10	7.79E-10	-0.03
UTERUS	1.03E-09	1.03E-09	-0.08
ET	5.21E-09	5.21E-09	0.00
LUNG	1.01E-09	1.01E-09	-0.13
COLON	2.32E-09	2.32E-09	0.02
ET1	1.95E-07	1.95E-07	0.01
ET2	5.02E-09	5.02E-09	0.01
LN(ET)	5.00E-09	5.00E-09	0.00
BBsec	1.02E-09	1.02E-09	-0.01
BBbas	1.01E-09	1.01E-09	-0.05
bb	1.01E-09	1.01E-09	-0.05
AI	1.00E-09	1.00E-09	-0.01
LN(TH)	1.00E-09	1.00E-09	-0.05
ESOPHAGUS	7.79E-10	7.79E-10	-0.03
REMAINDER	**1.01E-09**	**1.01E-09**	**-0.06**
C.E.D.	**1.79E-09**	**1.79E-09**	**0.01**
Maximum			**-0.13**

C.10.7.2. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.00E-10	6.00E-10	-0.02
URIN BLADDER	3.82E-10	3.83E-10	-0.03
BRAIN	4.24E-10	4.24E-10	-0.01
BREAST	1.88E-10	1.88E-10	-0.04
GALL BLADDER	4.12E-10	N/A	N/A
HEART	3.00E-10	N/A	N/A
KIDNEYS	4.39E-10	4.39E-10	-0.03
LIVER	2.97E-10	2.97E-10	-0.01
MUSCLE	3.70E-10	3.70E-10	0.00
OVARIES	9.52E-10	9.52E-10	-0.01
PANCREAS	4.12E-10	4.12E-10	-0.01
TESTES	2.15E-10	2.15E-10	-0.04
THYROID	3.05E-10	3.05E-10	-0.02
R.B.M.	1.90E-09	1.90E-09	-0.01
BONE SURFACE	3.24E-09	3.24E-09	-0.01
STOMACH	4.21E-10	4.21E-10	-0.02
S.I.	9.64E-10	9.64E-10	0.00
U.L.I.	1.96E-09	1.96E-09	0.00
L.L.I.	4.48E-09	4.48E-09	0.00
SKIN	2.27E-10	2.27E-10	-0.01
SPLEEN	3.04E-10	3.04E-10	-0.01
THYMUS	2.57E-10	2.57E-10	-0.01
UTERUS	5.24E-10	5.24E-10	-0.02
ET	3.05E-10	3.05E-10	-0.02
LUNG	3.36E-10	3.37E-10	-0.13
COLON	3.05E-09	3.05E-09	0.02
ET1	3.05E-10	3.05E-10	-0.02
ET2	3.05E-10	3.05E-10	-0.02
LN(ET)	3.05E-10	3.05E-10	-0.02
BBsec	3.36E-10	3.36E-10	-0.01
BBbas	3.36E-10	3.36E-10	-0.01
bb	3.36E-10	3.36E-10	-0.01
AI	3.36E-10	3.36E-10	-0.01
LN(TH)	3.36E-10	3.36E-10	-0.01
ESOPHAGUS	2.57E-10	2.57E-10	-0.01
REMAINDER	**3.86E-10**	**3.86E-10**	**-0.04**
C.E.D.	**1.00E-09**	**1.00E-09**	**0.02**
Maximum			**-0.13**

C.10.8. ^{140}Ba – Barium-140

Maximum difference in ***Effective Dose***: **+0.03%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.12%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.05%**.

C.10.8.1. Acute Inhalation (Type F: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.6297E-10	2.6290E-10	0.03
URIN BLADDER	3.2417E-10	3.2410E-10	0.02
BRAIN	1.7308E-10	1.7310E-10	-0.01
BREAST	1.0773E-10	1.0770E-10	0.03
GALL BLADDER	2.3058E-10	N/A	N/A
HEART	1.4906E-10	N/A	N/A
KIDNEYS	2.2572E-10	2.2570E-10	0.01
LIVER	1.5424E-10	1.5420E-10	0.03
MUSCLE	2.0371E-10	2.0370E-10	0.00
OVARIES	6.4896E-10	6.4900E-10	-0.01
PANCREAS	1.9867E-10	1.9860E-10	0.04
TESTES	1.3366E-10	1.3360E-10	0.04
THYROID	1.5132E-10	1.5130E-10	0.01
R.B.M.	1.6941E-09	1.6940E-09	0.01
BONE SURFACE	2.3816E-09	2.3820E-09	-0.02
STOMACH	2.6450E-10	2.6450E-10	0.00
S.I.	6.9518E-10	6.9520E-10	0.00
U.L.I.	4.0376E-09	4.0380E-09	-0.01
L.L.I.	1.2925E-08	1.2930E-08	-0.04
SKIN	1.2432E-10	1.2430E-10	0.02
SPLEEN	1.5883E-10	1.5880E-10	0.02
THYMUS	1.4978E-10	1.4970E-10	0.05
UTERUS	3.2732E-10	3.2730E-10	0.01
ET	8.7240E-09	8.7230E-09	0.01
LUNG	1.8427E-10	1.8450E-10	-0.12
COLON	7.8807E-09	7.8770E-09	0.05
ET1	2.2642E-06	2.2640E-06	0.01
ET2	6.4666E-09	6.4660E-09	0.01
LN(ET)	6.1275E-09	6.1270E-09	0.01
BBsec	2.3005E-10	2.3020E-10	-0.07
BBbas	2.1754E-10	2.1760E-10	-0.03
bb	1.6769E-10	1.6760E-10	0.05
AI	1.6142E-10	1.6140E-10	0.01
LN(TH)	1.5931E-10	1.5930E-10	0.01
ESOPHAGUS	1.4978E-10	1.4970E-10	0.05
REMAINDER	**4.4684E-09**	**4.4680E-09**	**0.01**
C.E.D.	**1.6255E-09**	**1.6250E-09**	**0.03**
Maximum			**-0.12**

C.10.8.2. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.2774E-10	1.2770E-10	0.03
URIN BLADDER	3.8987E-10	3.8990E-10	-0.01
BRAIN	5.0225E-11	5.0210E-11	0.03
BREAST	4.3109E-11	4.3090E-11	0.04
GALL BLADDER	2.5922E-10	N/A	N/A
HEART	6.5458E-11	N/A	N/A
KIDNEYS	1.6800E-10	1.6800E-10	0.00
LIVER	1.0917E-10	1.0920E-10	-0.03
MUSCLE	1.5792E-10	1.5790E-10	0.01
OVARIES	1.0736E-09	1.0740E-09	-0.04
PANCREAS	1.3880E-10	1.3880E-10	0.00
TESTES	1.3693E-10	1.3690E-10	0.02
THYROID	4.4642E-11	4.4630E-11	0.03
R.B.M.	7.1306E-10	7.1300E-10	0.01
BONE SURFACE	8.5291E-10	8.5290E-10	0.00
STOMACH	5.9016E-10	5.9010E-10	0.01
S.I.	1.7119E-09	1.7120E-09	-0.01
U.L.I.	8.5098E-09	8.5100E-09	0.00
L.L.I.	2.8880E-08	2.8880E-08	0.00
SKIN	7.5548E-11	7.5530E-11	0.02
SPLEEN	1.1736E-10	1.1740E-10	-0.03
THYMUS	4.8346E-11	4.8330E-11	0.03
UTERUS	4.5233E-10	4.5230E-10	0.01
ET	4.4642E-11	4.4630E-11	0.03
LUNG	6.1574E-11	6.1620E-11	-0.07
COLON	1.7318E-08	1.7310E-08	0.05
ET1	4.4642E-11	4.4630E-11	0.03
ET2	4.4642E-11	4.4630E-11	0.03
LN(ET)	4.4642E-11	4.4630E-11	0.03
BBsec	6.1574E-11	6.1560E-11	0.02
BBbas	6.1574E-11	6.1560E-11	0.02
bb	6.1574E-11	6.1560E-11	0.02
AI	6.1574E-11	6.1560E-11	0.02
LN(TH)	6.1574E-11	6.1560E-11	0.02
ESOPHAGUS	4.8346E-11	4.8330E-11	0.03
REMAINDER	**1.2774E-10**	**1.2770E-10**	**0.03**
C.E.D.	**3.8987E-10**	**3.8990E-10**	**-0.01**
Maximum			**-0.07**

C.10.9. ^{249}Bk – Berkelium-249

Maximum difference in ***Effective Dose***: **-0.59%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.74%** (Ingestion – Testes).
Maximum difference excluding ***Respiratory Tract***: **-0.74%**.

C.10.9.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.73E-11	7.77E-11	-0.57
URIN BLADDER	1.93E-11	1.94E-11	-0.60
BRAIN	2.97E-11	2.99E-11	-0.62
BREAST	1.88E-11	1.89E-11	-0.59
GALL BLADDER	7.60E-11	N/A	N/A
HEART	3.80E-11	N/A	N/A

KIDNEYS	5.12E-11	5.15E-11	-0.57
LIVER	2.76E-07	2.78E-07	-0.48
MUSCLE	2.86E-11	2.88E-11	-0.58
OVARIES	4.20E-08	4.23E-08	-0.73
PANCREAS	5.29E-11	5.32E-11	-0.56
TESTES	4.20E-08	4.23E-08	-0.73
THYROID	2.27E-11	2.29E-11	-0.62
R.B.M.	3.28E-07	3.30E-07	-0.64
BONE SURFACE	4.09E-06	4.12E-06	-0.62
STOMACH	4.27E-11	4.29E-11	-0.36
S.I.	7.86E-11	7.89E-11	-0.30
U.L.I.	2.80E-10	2.81E-10	-0.09
L.L.I.	7.45E-10	7.46E-10	-0.04
SKIN	1.79E-11	1.80E-11	-0.59
SPLEEN	2.49E-11	2.51E-11	-0.57
THYMUS	2.32E-11	2.33E-11	-0.59
UTERUS	2.85E-11	2.87E-11	-0.62
ET	1.17E-08	1.17E-08	-0.09
LUNG	1.12E-08	1.12E-08	-0.25
COLON	4.81E-10	4.82E-10	0.00
ET1	1.89E-07	1.90E-07	-0.01
ET2	1.16E-08	1.16E-08	-0.07
LN(ET)	9.04E-10	9.04E-10	-0.08
BBsec	2.54E-08	2.55E-08	-0.24
BBbas	7.40E-09	7.41E-09	-0.23
bb	9.20E-09	9.18E-09	0.20
AI	7.92E-09	7.93E-09	-0.05
LN(TH)	3.36E-09	3.36E-09	-0.07
ESOPHAGUS	2.32E-11	2.33E-11	-0.59
REMAINDER	**3.57E-11**	**3.59E-11**	**-0.51**
C.E.D.	**1.04E-07**	**1.05E-07**	**-0.59**
Maximum			**-0.73**

C.10.9.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.23E-13	6.26E-13	-0.56
URIN BLADDER	1.57E-13	1.58E-13	-0.56
BRAIN	2.40E-13	2.41E-13	-0.61
BREAST	1.50E-13	1.51E-13	-0.58
GALL BLADDER	6.13E-13	N/A	N/A
HEART	3.04E-13	N/A	N/A
KIDNEYS	4.13E-13	4.16E-13	-0.56
LIVER	2.23E-09	2.25E-09	-0.45
MUSCLE	2.30E-13	2.32E-13	-0.57
OVARIES	3.41E-10	3.44E-10	-0.73
PANCREAS	4.26E-13	4.28E-13	-0.55
TESTES	3.42E-10	3.44E-10	-0.74
THYROID	1.83E-13	1.84E-13	-0.58
R.B.M.	2.66E-09	2.68E-09	-0.62
BONE SURFACE	3.32E-08	3.34E-08	-0.61
STOMACH	3.81E-11	3.81E-11	-0.02
S.I.	9.50E-11	9.50E-11	-0.01
U.L.I.	5.73E-10	5.73E-10	0.00
L.L.I.	1.68E-09	1.68E-09	-0.02
SKIN	1.44E-13	1.45E-13	-0.57
SPLEEN	2.00E-13	2.01E-13	-0.57
THYMUS	1.85E-13	1.86E-13	-0.60
UTERUS	2.31E-13	2.33E-13	-0.58
ET	1.83E-13	1.84E-13	-0.58
LUNG	3.06E-13	3.08E-13	-0.66
COLON	1.05E-09	1.05E-09	0.01
ET1	1.83E-13	1.84E-13	-0.58
ET2	1.83E-13	1.84E-13	-0.58
LN(ET)	1.83E-13	1.84E-13	-0.58
BBsec	3.06E-13	3.07E-13	-0.57
BBbas	3.06E-13	3.07E-13	-0.57
bb	3.06E-13	3.07E-13	-0.57
AI	3.06E-13	3.07E-13	-0.57
LN(TH)	3.06E-13	3.07E-13	-0.57
ESOPHAGUS	1.85E-13	1.86E-13	-0.60
REMAINDER	**2.20E-12**	**2.21E-12**	**-0.14**
C.E.D.	**9.62E-10**	**9.67E-10**	**-0.52**
Maximum			**-0.74**

C.10.10. ^{14}C – Carbon-14 (Organic Particulate)

Difference in ***Effective Dose***: **+0.86%**.
Maximum difference in ***Organ Dose***: **+0.89%**.

C.10.10.1. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.7485E-10	5.6980E-10	0.89
URIN BLADDER	5.7485E-10	5.6980E-10	0.89
BRAIN	5.7485E-10	5.6980E-10	0.89
BREAST	5.7485E-10	5.6980E-10	0.89
GALL BLADDER	5.7485E-10	N/A	N/A
HEART	5.7485E-10	N/A	N/A
KIDNEYS	5.7485E-10	5.6980E-10	0.89
LIVER	5.7485E-10	5.6980E-10	0.89
MUSCLE	5.7485E-10	5.6980E-10	0.89
OVARIES	5.7485E-10	5.6980E-10	0.89
PANCREAS	5.7485E-10	5.6980E-10	0.89
TESTES	5.7485E-10	5.6980E-10	0.89
THYROID	5.7485E-10	5.6980E-10	0.89

R.B.M.	5.7485E-10	5.6980E-10	0.89
BONE SURFACE	5.7485E-10	5.6980E-10	0.89
STOMACH	6.3182E-10	6.2680E-10	0.80
S.I.	5.7627E-10	5.7120E-10	0.89
U.L.I.	5.8347E-10	5.7840E-10	0.88
L.L.I.	6.0014E-10	5.9510E-10	0.85
SKIN	5.7485E-10	5.6980E-10	0.89
SPLEEN	5.7485E-10	5.6980E-10	0.89
THYMUS	5.7485E-10	5.6980E-10	0.89
UTERUS	5.7485E-10	5.6980E-10	0.89
ET	5.7485E-10	5.6980E-10	0.89
LUNG	5.7485E-10	5.7040E-10	0.78
COLON	5.9068E-10	5.8560E-10	0.87
ET1	5.7485E-10	5.6980E-10	0.89
ET2	5.7485E-10	5.6980E-10	0.89
LN(ET)	5.7485E-10	5.6980E-10	0.89
BBsec	5.7485E-10	5.6980E-10	0.89
BBbas	5.7485E-10	5.6980E-10	0.89
bb	5.7485E-10	5.6980E-10	0.89
AI	5.7485E-10	5.6980E-10	0.89
LN(TH)	5.7485E-10	5.6980E-10	0.89
ESOPHAGUS	5.7485E-10	5.6980E-10	0.89
REMAINDER	**5.7488E-10**	**5.6980E-10**	**0.89**
C.E.D.	**5.8359E-10**	**5.7860E-10**	**0.86**
Maximum			**0.89**

C.10.11. ^{45}Ca – Calcium-45

Maximum difference in ***Effective Dose***: **-7.24%** (Ingestion).
Maximum difference in ***Organ Dose***: **-27.87%** (Ingestion – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-27.81%**.

C.10.11.1. Acute Inhalation (Type M: f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.28E-11	3.16E-11	-27.81
URIN BLADDER	4.69E-11	4.86E-11	-3.43
BRAIN	2.28E-11	3.16E-11	-27.81
BREAST	2.28E-11	3.16E-11	-27.81
GALL BLADDER	2.28E-11	N/A	N/A
HEART	2.28E-11	N/A	N/A
KIDNEYS	2.28E-11	3.16E-11	-27.81
LIVER	2.28E-11	3.16E-11	-27.81
MUSCLE	2.28E-11	3.16E-11	-27.81
OVARIES	2.28E-11	3.16E-11	-27.81
PANCREAS	2.28E-11	3.16E-11	-27.81
TESTES	2.28E-11	3.16E-11	-27.81
THYROID	2.28E-11	3.16E-11	-27.81
R.B.M.	1.77E-09	2.04E-09	-13.43
BONE SURFACE	3.55E-09	2.81E-09	26.29
STOMACH	5.97E-11	6.85E-11	-12.82
S.I.	8.74E-11	9.62E-11	-9.14
U.L.I.	4.78E-10	4.83E-10	-0.99
L.L.I.	1.35E-09	1.35E-09	0.24
SKIN	2.28E-11	3.16E-11	-27.81
SPLEEN	2.28E-11	3.16E-11	-27.81
THYMUS	2.28E-11	3.16E-11	-27.81
UTERUS	2.28E-11	3.16E-11	-27.81
ET	4.73E-09	4.74E-09	-0.21
LUNG	1.60E-08	1.61E-08	-0.42
COLON	8.57E-10	8.58E-10	-0.13
ET1	1.08E-06	1.08E-06	-0.03
ET2	3.65E-09	3.66E-09	-0.26
LN(ET)	1.58E-10	1.67E-10	-5.28
BBsec	4.28E-08	4.29E-08	-0.24
BBbas	2.80E-08	2.81E-08	-0.24
bb	8.95E-09	8.95E-09	0.08
AI	3.74E-09	3.75E-09	-0.27
LN(TH)	4.27E-10	4.36E-10	-2.05
ESOPHAGUS	2.28E-11	3.16E-11	-27.81
REMAINDER	**2.65E-11**	**3.53E-11**	**-24.94**
C.E.D.	**2.29E-09**	**2.33E-09**	**-1.66**
Maximum			**-27.81**

C.10.11.2. Acute Ingestion (f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.95E-11	5.48E-11	-27.79
URIN BLADDER	8.12E-11	8.41E-11	-3.44
BRAIN	3.95E-11	5.48E-11	-27.79
BREAST	3.95E-11	5.48E-11	-27.79
GALL BLADDER	3.95E-11	N/A	N/A
HEART	3.95E-11	N/A	N/A
KIDNEYS	3.95E-11	5.48E-11	-27.79
LIVER	3.95E-11	5.48E-11	-27.79
MUSCLE	3.95E-11	5.48E-11	-27.79
OVARIES	3.95E-11	5.48E-11	-27.79
PANCREAS	3.95E-11	5.48E-11	-27.79
TESTES	3.95E-11	5.48E-11	-27.79

THYROID	3.95E-11	5.48E-11	-27.79
R.B.M.	3.06E-09	3.54E-09	-13.43
BONE SURFACE	6.15E-09	4.87E-09	26.3
STOMACH	1.29E-10	1.44E-10	-10.58
S.I.	1.95E-10	2.10E-10	-7.26
U.L.I.	1.09E-09	1.10E-09	-0.77
L.L.I.	3.12E-09	3.11E-09	0.15
SKIN	3.95E-11	5.48E-11	-27.79
SPLEEN	3.95E-11	5.48E-11	-27.79
THYMUS	3.95E-11	5.48E-11	-27.79
UTERUS	3.95E-11	5.48E-11	-27.79
ET	3.95E-11	5.48E-11	-27.79
LUNG	3.95E-11	5.48E-11	-27.87
COLON	1.97E-09	1.97E-09	-0.09
ET1	3.95E-11	5.48E-11	-27.79
ET2	3.95E-11	5.48E-11	-27.79
LN(ET)	3.95E-11	5.48E-11	-27.79
BBsec	3.95E-11	5.48E-11	-27.79
BBbas	3.95E-11	5.48E-11	-27.79
bb	3.95E-11	5.48E-11	-27.79
AI	3.95E-11	5.48E-11	-27.79
LN(TH)	3.95E-11	5.48E-11	-27.79
ESOPHAGUS	3.95E-11	5.48E-11	-27.79
REMAINDER	**4.28E-11**	**5.80E-11**	**-26.24**
C.E.D.	**7.08E-10**	**7.63E-10**	**-7.24**
Maximum			**-27.87**

Note: ICRP Publication 68 (ICRP 1994b) tabulated dose coefficients (and **PLEIADES**) assume the ICRP Publication 10 (ICRP 1968) metabolic model for calcium. IMBA assumes ICRP's currently recommended calcium biokinetic model (ICRP 1995).

C.10.12. ^{139}Ce – Cerium-139

Maximum difference in ***Effective Dose***: **-0.29%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.36%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.09%**.

C.10.12.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.22E-10	4.22E-10	0.01
URIN BLADDER	9.40E-11	9.40E-11	0.04
BRAIN	7.70E-11	7.69E-11	0.05
BREAST	1.78E-10	1.78E-10	0.02
GALL BLADDER	5.84E-10	N/A	N/A
HEART	3.74E-10	N/A	N/A
KIDNEYS	2.52E-10	2.52E-10	0.03
LIVER	2.58E-09	2.58E-09	0.02
MUSCLE	1.59E-10	1.59E-10	0.02
OVARIES	2.02E-10	2.02E-10	0.01
PANCREAS	3.39E-10	3.39E-10	0.01
TESTES	5.61E-11	5.60E-11	0.06
THYROID	1.06E-10	1.06E-10	0.04
R.B.M.	4.68E-10	4.68E-10	0.02
BONE SURFACE	3.21E-09	3.21E-09	0.03
STOMACH	2.15E-10	2.15E-10	0.00
S.I.	2.65E-10	2.65E-10	0.02
U.L.I.	5.57E-10	5.57E-10	0.01
L.L.I.	1.09E-09	1.09E-09	0.00
SKIN	8.18E-11	8.18E-11	0.04
SPLEEN	1.72E-10	1.73E-10	-0.01
THYMUS	2.10E-10	2.10E-10	0.00
UTERUS	1.30E-10	1.30E-10	0.06
ET	3.57E-09	3.57E-09	0.01
LUNG	7.35E-09	7.37E-09	-0.34
COLON	7.87E-10	7.87E-10	0.03
ET1	5.05E-07	5.05E-07	0.02
ET2	3.07E-09	3.07E-09	0.00
LN(ET)	1.98E-09	1.98E-09	0.02
BBsec	1.76E-08	1.76E-08	-0.17
BBbas	1.44E-08	1.44E-08	-0.21
bb	3.65E-09	3.64E-09	0.15
AI	2.43E-09	2.43E-09	-0.02
LN(TH)	9.82E-10	9.82E-10	0.00
ESOPHAGUS	2.10E-10	2.10E-10	0.00
REMAINDER	**1.61E-10**	**1.61E-10**	**0.04**
C.E.D.	**1.30E-09**	**1.30E-09**	**-0.24**
Maximum			**-0.34**

C.10.12.2. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.99E-10	1.99E-10	0.01
URIN BLADDER	3.24E-11	3.24E-11	0.00
BRAIN	1.24E-11	1.24E-11	0.02
BREAST	1.93E-10	1.93E-10	-0.02
GALL BLADDER	9.43E-11	N/A	N/A
HEART	3.76E-10	N/A	N/A
KIDNEYS	6.34E-11	6.34E-11	0.01
LIVER	2.39E-10	2.39E-10	0.03
MUSCLE	9.96E-11	9.96E-11	0.01
OVARIES	1.10E-10	1.10E-10	-0.02
PANCREAS	1.44E-10	1.44E-10	-0.01
TESTES	8.67E-12	8.67E-12	0.01
THYROID	6.81E-11	6.81E-11	0.01
R.B.M.	1.14E-10	1.14E-10	0.00
BONE SURFACE	2.36E-10	2.36E-10	-0.01
STOMACH	1.38E-10	1.38E-10	0.01

S.I.	1.50E-10	1.50E-10	0.01
U.L.I.	4.34E-10	4.34E-10	-0.01
L.L.I.	1.07E-09	1.07E-09	-0.05
SKIN	3.80E-11	3.80E-11	0.02
SPLEEN	1.42E-10	1.42E-10	0.01
THYMUS	2.30E-10	2.30E-10	0.02
UTERUS	4.63E-11	4.63E-11	-0.01
ET	4.58E-09	4.58E-09	0.00
LUNG	1.00E-08	1.01E-08	-0.36
COLON	7.08E-10	7.07E-10	0.04
ET1	5.05E-07	5.05E-07	0.01
ET2	4.08E-09	4.08E-09	0.00
LN(ET)	2.21E-09	2.21E-09	0.00
BBsec	2.25E-08	2.26E-08	-0.21
BBbas	1.84E-08	1.85E-08	-0.17
bb	5.30E-09	5.29E-09	0.13
AI	4.32E-09	4.32E-09	0.00
LN(TH)	1.71E-09	1.71E-09	0.01
ESOPHAGUS	2.30E-10	2.30E-10	0.02
REMAINDER	**9.89E-11**	**9.88E-11**	**0.09**
C.E.D.	**1.39E-09**	**1.39E-09**	**-0.29**
Maximum			**-0.36**

C.10.12.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.27E-11	1.27E-11	0.02
URIN BLADDER	6.72E-11	6.72E-11	0.00
BRAIN	7.37E-13	7.37E-13	0.06
BREAST	1.89E-12	1.89E-12	0.01
GALL BLADDER	6.85E-11	N/A	N/A
HEART	5.39E-12	N/A	N/A
KIDNEYS	2.59E-11	2.59E-11	0.01
LIVER	4.12E-11	4.12E-11	0.01
MUSCLE	2.37E-11	2.37E-11	0.01
OVARIES	2.34E-10	2.34E-10	0.00
PANCREAS	2.45E-11	2.45E-11	0.00
TESTES	1.64E-11	1.65E-11	-0.02
THYROID	8.26E-13	8.26E-13	0.05
R.B.M.	3.84E-11	3.84E-11	0.00
BONE SURFACE	6.27E-11	6.27E-11	0.02
STOMACH	1.00E-10	1.00E-10	0.01
S.I.	3.10E-10	3.10E-10	0.00
U.L.I.	9.42E-10	9.42E-10	0.01
L.L.I.	2.39E-09	2.39E-09	-0.01
SKIN	6.78E-12	6.78E-12	0.00
SPLEEN	1.77E-11	1.77E-11	-0.02
THYMUS	1.72E-12	1.72E-12	0.05
UTERUS	9.28E-11	9.28E-11	0.01
ET	8.26E-13	8.26E-13	0.05
LUNG	3.95E-12	3.95E-12	-0.08
COLON	1.57E-09	1.57E-09	0.06
ET1	8.26E-13	8.26E-13	0.05
ET2	8.26E-13	8.26E-13	0.05
LN(ET)	8.26E-13	8.26E-13	0.05
BBsec	3.95E-12	3.95E-12	0.03
BBbas	3.95E-12	3.95E-12	0.03
bb	3.95E-12	3.95E-12	0.03
AI	3.95E-12	3.95E-12	0.03
LN(TH)	3.95E-12	3.95E-12	0.03
ESOPHAGUS	1.72E-12	1.72E-12	0.05
REMAINDER	**2.87E-11**	**2.87E-11**	**-0.05**
C.E.D.	**2.60E-10**	**2.60E-10**	**0.03**
Maximum			**-0.08**

C.10.13. ^{141}Ce – Cerium-141

Maximum difference in ***Effective Dose***: **-0.33%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.37%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.10%**.

C.10.13.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.3744E-11	6.3720E-11	0.04
URIN BLADDER	3.1271E-11	3.1250E-11	0.07
BRAIN	2.1163E-11	2.1140E-11	0.11
BREAST	4.0847E-11	4.0830E-11	0.04
GALL BLADDER	7.6190E-11	N/A	N/A
HEART	7.0247E-11	N/A	N/A
KIDNEYS	4.2485E-11	4.2460E-11	0.06
LIVER	1.2354E-09	1.2350E-09	0.03
MUSCLE	3.6274E-11	3.6250E-11	0.07
OVARIES	6.2358E-11	6.2340E-11	0.03
PANCREAS	5.5688E-11	5.5670E-11	0.03
TESTES	1.9769E-11	1.9750E-11	0.10
THYROID	2.8206E-11	2.8180E-11	0.09
R.B.M.	2.4658E-10	2.4660E-10	-0.01
BONE SURFACE	2.5661E-09	2.5660E-09	0.00
STOMACH	1.2475E-10	1.2470E-10	0.04
S.I.	2.6049E-10	2.6050E-10	0.00
U.L.I.	1.2721E-09	1.2720E-09	0.01
L.L.I.	3.5339E-09	3.5340E-09	0.00
SKIN	2.3213E-11	2.3190E-11	0.10
SPLEEN	3.9392E-11	3.9370E-11	0.06
THYMUS	4.8995E-11	4.8970E-11	0.05
UTERUS	3.8890E-11	3.8870E-11	0.05
ET	5.3833E-09	5.3830E-09	0.01
LUNG	1.9163E-08	1.9230E-08	-0.35
COLON	2.2501E-09	2.2490E-09	0.05
ET1	2.0675E-06	2.0670E-06	0.02
ET2	3.3217E-09	3.3220E-09	-0.01
LN(ET)	7.2589E-10	7.2580E-10	0.01
BBsec	5.1309E-08	5.1420E-08	-0.22
BBbas	3.9029E-08	3.9110E-08	-0.21
bb	8.9133E-09	8.8970E-09	0.18
AI	3.4625E-09	3.4630E-09	-0.01
LN(TH)	3.0080E-10	3.0080E-10	0.00
ESOPHAGUS	4.8995E-11	4.8970E-11	0.05
REMAINDER	**4.3031E-11**	**4.3010E-11**	**0.05**
C.E.D.	**2.7239E-09**	**2.7320E-09**	**-0.30**
Maximum			**-0.35**

C.10.13.2. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.1043E-11	3.1040E-11	0.01
URIN BLADDER	1.4193E-11	1.4190E-11	0.02
BRAIN	3.6026E-12	3.6020E-12	0.02
BREAST	2.8945E-11	2.8950E-11	-0.02
GALL BLADDER	2.2317E-11	N/A	N/A
HEART	5.5603E-11	N/A	N/A
KIDNEYS	1.3365E-11	1.3360E-11	0.04
LIVER	5.1591E-11	5.1590E-11	0.00
MUSCLE	1.8638E-11	1.8640E-11	-0.01
OVARIES	4.3682E-11	4.3680E-11	0.00
PANCREAS	2.5534E-11	2.5530E-11	0.02
TESTES	3.7178E-12	3.7180E-12	-0.01
THYROID	1.2677E-11	1.2680E-11	-0.02
R.B.M.	2.5921E-11	2.5920E-11	0.00
BONE SURFACE	7.8944E-11	7.8940E-11	0.01
STOMACH	1.1024E-10	1.1020E-10	0.04
S.I.	2.5101E-10	2.5100E-10	0.00
U.L.I.	1.3200E-09	1.3200E-09	0.00
L.L.I.	3.7220E-09	3.7220E-09	0.00
SKIN	7.2441E-12	7.2440E-12	0.00
SPLEEN	2.3813E-11	2.3810E-11	0.01
THYMUS	3.7669E-11	3.7670E-11	0.00
UTERUS	2.0011E-11	2.0010E-11	0.00
ET	6.0744E-09	6.0750E-09	-0.01
LUNG	2.3493E-08	2.3580E-08	-0.37
COLON	2.3587E-09	2.3580E-09	0.03
ET1	2.0675E-06	2.0670E-06	0.02
ET2	4.0142E-09	4.0150E-09	-0.02
LN(ET)	7.4168E-10	7.4160E-10	0.01
BBsec	6.2355E-08	6.2480E-08	-0.20
BBbas	4.7459E-08	4.7560E-08	-0.21
bb	1.1070E-08	1.1050E-08	0.18
AI	4.5722E-09	4.5720E-09	0.00
LN(TH)	4.0301E-10	4.0310E-10	-0.02
ESOPHAGUS	3.7669E-11	3.7670E-11	0.00
REMAINDER	**2.5763E-11**	**2.5760E-11**	**0.01**
C.E.D.	**3.1367E-09**	**3.1470E-09**	**-0.33**
Maximum			**-0.37**

C.10.13.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.3751E-12	5.3750E-12	0.00
URIN BLADDER	3.1884E-11	3.1880E-11	0.01
BRAIN	2.4856E-13	2.4830E-13	0.10
BREAST	7.9292E-13	7.9260E-13	0.04
GALL BLADDER	3.0003E-11	N/A	N/A
HEART	2.1526E-12	N/A	N/A
KIDNEYS	1.2175E-11	1.2170E-11	0.04
LIVER	2.3737E-11	2.3740E-11	-0.01
MUSCLE	1.0769E-11	1.0770E-11	-0.01
OVARIES	9.8901E-11	9.8900E-11	0.00
PANCREAS	1.1251E-11	1.1250E-11	0.01
TESTES	7.9686E-12	7.9680E-12	0.01
THYROID	2.9578E-13	2.9550E-13	0.09
R.B.M.	1.9219E-11	1.9220E-11	-0.01
BONE SURFACE	4.8042E-11	4.8040E-11	0.00
STOMACH	2.2207E-10	2.2210E-10	-0.01
S.I.	5.7696E-10	5.7700E-10	-0.01
U.L.I.	3.0514E-09	3.0510E-09	0.01
L.L.I.	8.6184E-09	8.6180E-09	0.00
SKIN	3.2206E-12	3.2200E-12	0.02
SPLEEN	8.7096E-12	8.7090E-12	0.01
THYMUS	6.6151E-13	6.6120E-13	0.05
UTERUS	4.4515E-11	4.4510E-11	0.01
ET	2.9578E-13	2.9550E-13	0.09
LUNG	1.4254E-12	1.4260E-12	-0.04
COLON	5.4588E-09	5.4560E-09	0.05
ET1	2.9578E-13	2.9550E-13	0.09
ET2	2.9578E-13	2.9550E-13	0.09
LN(ET)	2.9578E-13	2.9550E-13	0.09
BBsec	1.4254E-12	1.4250E-12	0.03
BBbas	1.4254E-12	1.4250E-12	0.03
bb	1.4254E-12	1.4250E-12	0.03
AI	1.4254E-12	1.4250E-12	0.03
LN(TH)	1.4254E-12	1.4250E-12	0.03
ESOPHAGUS	6.6151E-13	6.6120E-13	0.05
REMAINDER	**2.2148E-11**	**2.2160E-11**	**-0.05**
C.E.D.	**7.0845E-10**	**7.0820E-10**	**0.04**
Maximum			**0.10**

C.10.14. ^{143}Ce – Cerium-143

Maximum difference in ***Effective Dose***: **-0.14%** (Inhalation – types "M"/"S").
Maximum difference in ***Organ Dose***: **-0.36%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **±0.05%**.

C.10.14.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.56E-11	1.56E-11	0.02
URIN BLADDER	2.54E-11	2.54E-11	0.01
BRAIN	9.36E-12	9.36E-12	0.03
BREAST	1.08E-11	1.08E-11	-0.01
GALL BLADDER	3.62E-11	N/A	N/A
HEART	1.74E-11	N/A	N/A
KIDNEYS	1.73E-11	1.73E-11	0.00
LIVER	1.82E-10	1.82E-10	-0.02
MUSCLE	1.97E-11	1.97E-11	0.01
OVARIES	8.20E-11	8.20E-11	0.00
PANCREAS	1.98E-11	1.98E-11	0.02
TESTES	9.25E-12	9.24E-12	0.02
THYROID	1.11E-11	1.11E-11	0.05
R.B.M.	5.21E-11	5.21E-11	0.01
BONE SURFACE	5.89E-11	5.89E-11	0.00
STOMACH	2.26E-10	2.26E-10	-0.01
S.I.	5.27E-10	5.27E-10	-0.01
U.L.I.	2.29E-09	2.29E-09	0.01

L.L.I.	4.57E-09	4.57E-09	0.00
SKIN	9.14E-12	9.14E-12	0.04
SPLEEN	1.53E-11	1.53E-11	-0.01
THYMUS	1.64E-11	1.64E-11	0.01
UTERUS	3.88E-11	3.88E-11	-0.01
ET	3.98E-09	3.98E-09	0.00
LUNG	3.28E-09	3.29E-09	-0.36
COLON	3.28E-09	3.28E-09	0.04
ET1	1.34E-06	1.34E-06	-0.01
ET2	2.64E-09	2.64E-09	0.00
LN(ET)	1.76E-09	1.76E-09	0.01
BBsec	7.97E-09	7.98E-09	-0.20
BBbas	6.73E-09	6.74E-09	-0.19
bb	1.64E-09	1.64E-09	0.15
AI	8.46E-10	8.46E-10	-0.01
LN(TH)	4.63E-11	4.64E-11	-0.02
ESOPHAGUS	1.64E-11	1.64E-11	0.01
REMAINDER	**2.00E-09**	**2.00E-09**	**0.02**
C.E.D.	**9.49E-10**	**9.51E-10**	**-0.14**
Maximum			**-0.36**

C.10.14.2. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.10E-11	1.11E-11	-0.05
URIN BLADDER	2.33E-11	2.33E-11	0.01
BRAIN	6.15E-12	6.15E-12	0.01
BREAST	8.10E-12	8.10E-12	0.00
GALL BLADDER	3.09E-11	N/A	N/A
HEART	1.44E-11	N/A	N/A
KIDNEYS	1.35E-11	1.35E-11	0.02
LIVER	1.61E-11	1.61E-11	0.01
MUSCLE	1.69E-11	1.69E-11	0.02
OVARIES	8.26E-11	8.26E-11	-0.01
PANCREAS	1.58E-11	1.58E-11	-0.03
TESTES	6.48E-12	6.48E-12	-0.01
THYROID	8.00E-12	8.00E-12	0.00
R.B.M.	2.07E-11	2.07E-11	-0.03
BONE SURFACE	1.81E-11	1.81E-11	0.02
STOMACH	2.35E-10	2.35E-10	0.00
S.I.	5.52E-10	5.52E-10	-0.01
U.L.I.	2.41E-09	2.41E-09	-0.02
L.L.I.	4.82E-09	4.82E-09	-0.01
SKIN	6.24E-12	6.24E-12	-0.01
SPLEEN	1.26E-11	1.26E-11	0.01
THYMUS	1.37E-11	1.37E-11	-0.03
UTERUS	3.72E-11	3.72E-11	0.01
ET	4.04E-09	4.04E-09	-0.01
LUNG	3.74E-09	3.75E-09	-0.36
COLON	3.45E-09	3.45E-09	0.02
ET1	1.34E-06	1.34E-06	-0.01
ET2	2.71E-09	2.71E-09	-0.01
LN(ET)	1.76E-09	1.76E-09	-0.02
BBsec	9.09E-09	9.11E-09	-0.20
BBbas	7.67E-09	7.69E-09	-0.19
bb	1.88E-09	1.87E-09	0.14
AI	9.73E-10	9.73E-10	-0.02
LN(TH)	4.84E-11	4.84E-11	-0.02
ESOPHAGUS	1.37E-11	1.37E-11	-0.03
REMAINDER	**2.04E-09**	**2.04E-09**	**0.00**
C.E.D.	**1.02E-09**	**1.02E-09**	**-0.14**
Maximum			**-0.36**

C.10.14.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.23E-11	1.23E-11	0.04
URIN BLADDER	5.60E-11	5.60E-11	0.00
BRAIN	9.62E-14	9.61E-14	0.05
BREAST	2.21E-12	2.21E-12	-0.01
GALL BLADDER	6.98E-11	N/A	N/A
HEART	5.45E-12	N/A	N/A
KIDNEYS	2.81E-11	2.81E-11	0.00
LIVER	2.19E-11	2.19E-11	-0.02
MUSCLE	2.23E-11	2.23E-11	-0.01
OVARIES	1.99E-10	1.99E-10	0.00
PANCREAS	2.77E-11	2.77E-11	0.01
TESTES	1.55E-11	1.55E-11	0.01
THYROID	3.58E-13	3.58E-13	0.03
R.B.M.	3.45E-11	3.45E-11	0.01
BONE SURFACE	2.12E-11	2.12E-11	0.00
STOMACH	5.59E-10	5.59E-10	0.00
S.I.	1.33E-09	1.33E-09	0.01
U.L.I.	5.81E-09	5.81E-09	0.00
L.L.I.	1.16E-08	1.16E-08	-0.02
SKIN	7.27E-12	7.27E-12	0.01
SPLEEN	2.00E-11	2.00E-11	0.01
THYMUS	1.62E-12	1.62E-12	0.01
UTERUS	8.94E-11	8.94E-11	0.00
ET	3.58E-13	3.58E-13	0.03
LUNG	3.51E-12	3.51E-12	-0.09
COLON	8.31E-09	8.31E-09	0.03
ET1	3.58E-13	3.58E-13	0.03
ET2	3.58E-13	3.58E-13	0.03
LN(ET)	3.58E-13	3.58E-13	0.03
BBsec	3.51E-12	3.51E-12	0.00
BBbas	3.51E-12	3.51E-12	0.00
bb	3.51E-12	3.51E-12	0.00
AI	3.51E-12	3.51E-12	0.00
LN(TH)	3.51E-12	3.51E-12	0.00
ESOPHAGUS	1.62E-12	1.62E-12	0.01
REMAINDER	**4.87E-11**	**4.87E-11**	**-0.05**
C.E.D.	**1.12E-09**	**1.12E-09**	**0.05**
Maximum			**-0.09**

C.10.15. ^{144}Ce – Cerium-144

Maximum difference in ***Effective Dose***: **-0.16%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.18%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.17%**.

C.10.15.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.4000E-09	1.3980E-09	0.14
URIN BLADDER	1.2176E-09	1.2160E-09	0.13
BRAIN	1.2108E-09	1.2090E-09	0.15
BREAST	1.2546E-09	1.2530E-09	0.13
GALL BLADDER	1.4978E-09	N/A	N/A
HEART	1.3447E-09	N/A	N/A
KIDNEYS	1.3170E-09	1.3150E-09	0.15
LIVER	1.0055E-07	1.0060E-07	-0.05
MUSCLE	1.2482E-09	1.2470E-09	0.10
OVARIES	1.2584E-09	1.2570E-09	0.11
PANCREAS	1.3549E-09	1.3530E-09	0.14
TESTES	1.1982E-09	1.1970E-09	0.10
THYROID	1.2233E-09	1.2220E-09	0.11
R.B.M.	1.9236E-08	1.9240E-08	-0.02
BONE SURFACE	3.4034E-08	3.4040E-08	-0.02
STOMACH	1.7948E-09	1.7930E-09	0.10
S.I.	2.8105E-09	2.8090E-09	0.05
U.L.I.	1.0807E-08	1.0810E-08	-0.03
L.L.I.	2.9107E-08	2.9110E-08	-0.01
SKIN	1.2145E-09	1.2130E-09	0.12
SPLEEN	1.2551E-09	1.2530E-09	0.17
THYMUS	1.2678E-09	1.2660E-09	0.14
UTERUS	1.2342E-09	1.2330E-09	0.10
ET	1.5394E-08	1.5390E-08	0.03
LUNG	1.0372E-07	1.0390E-07	-0.17
COLON	1.8720E-08	1.8710E-08	0.05
ET1	2.8669E-06	2.8670E-06	0.00
ET2	1.2547E-08	1.2550E-08	-0.02
LN(ET)	5.1293E-09	5.1290E-09	0.01
BBsec	1.5834E-07	1.5860E-07	-0.16
BBbas	1.3858E-07	1.3880E-07	-0.16
bb	8.6656E-08	8.6630E-08	0.03
AI	7.6330E-08	7.6340E-08	-0.01
LN(TH)	1.0897E-08	1.0900E-08	-0.03
ESOPHAGUS	1.2678E-09	1.2660E-09	0.14
REMAINDER	**1.2870E-09**	**1.2850E-09**	**0.16**
C.E.D.	**2.3161E-08**	**2.3190E-08**	**-0.13**
Maximum			**-0.17**

C.10.15.2 Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.3515E-10	1.3510E-10	0.04
URIN BLADDER	4.9665E-11	4.9610E-11	0.11
BRAIN	4.6688E-11	4.6640E-11	0.10
BREAST	1.3483E-10	1.3480E-10	0.02
GALL BLADDER	8.5549E-11	N/A	N/A
HEART	2.1254E-10	N/A	N/A
KIDNEYS	7.3685E-11	7.3640E-11	0.06
LIVER	3.3791E-09	3.3800E-09	-0.03
MUSCLE	8.3524E-11	8.3480E-11	0.05
OVARIES	7.1948E-11	7.1900E-11	0.07
PANCREAS	1.1027E-10	1.1020E-10	0.06
TESTES	4.2241E-11	4.2190E-11	0.12
THYROID	7.6195E-11	7.6150E-11	0.06
R.B.M.	6.8036E-10	6.8040E-10	-0.01
BONE SURFACE	1.1769E-09	1.1770E-09	-0.01
STOMACH	6.6373E-10	6.6370E-10	0.00
S.I.	1.7305E-09	1.7300E-09	0.03
U.L.I.	1.0258E-08	1.0260E-08	-0.02
L.L.I.	2.9889E-08	2.9890E-08	0.00
SKIN	5.9721E-11	5.9670E-11	0.09
SPLEEN	1.0765E-10	1.0760E-10	0.05
THYMUS	1.5295E-10	1.5290E-10	0.03
UTERUS	5.4818E-11	5.4770E-11	0.09
ET	3.1083E-08	3.1090E-08	-0.02
LUNG	2.1751E-07	2.1790E-07	-0.18
COLON	1.8747E-08	1.8740E-08	0.04
ET1	2.8658E-06	2.8660E-06	-0.01
ET2	2.8247E-08	2.8260E-08	-0.05
LN(ET)	2.7290E-08	2.7300E-08	-0.04
BBsec	2.7085E-07	2.7120E-07	-0.13
BBbas	2.4615E-07	2.4640E-07	-0.10
bb	2.0134E-07	2.0130E-07	0.02
AI	1.9320E-07	1.9320E-07	0.00
LN(TH)	4.8019E-08	4.8040E-08	-0.04
ESOPHAGUS	1.5295E-10	1.5290E-10	0.03
REMAINDER	**1.3136E-10**	**1.3130E-10**	**0.05**
C.E.D.	**2.8735E-08**	**2.8780E-08**	**-0.16**
Maximum			**-0.18**

C.10.15.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.6043E-11	1.6030E-11	0.08
URIN BLADDER	3.0106E-11	3.0090E-11	0.05
BRAIN	1.1477E-11	1.1460E-11	0.15
BREAST	1.2129E-11	1.2110E-11	0.16
GALL BLADDER	3.1366E-11	N/A	N/A
HEART	1.3457E-11	N/A	N/A
KIDNEYS	1.9630E-11	1.9610E-11	0.10
LIVER	9.5822E-10	9.5830E-10	-0.01
MUSCLE	1.8319E-11	1.8300E-11	0.10
OVARIES	7.3671E-11	7.3650E-11	0.03
PANCREAS	1.9000E-11	1.8980E-11	0.11
TESTES	1.6507E-11	1.6490E-11	0.10
THYROID	1.1573E-11	1.1560E-11	0.11
R.B.M.	1.9231E-10	1.9230E-10	0.01
BONE SURFACE	3.2977E-10	3.2980E-10	-0.01
STOMACH	1.1141E-09	1.1140E-09	0.01
S.I.	3.7099E-09	3.7100E-09	0.00
U.L.I.	2.2695E-08	2.2700E-08	-0.02
L.L.I.	6.6357E-08	6.6360E-08	0.00
SKIN	1.3682E-11	1.3660E-11	0.16
SPLEEN	1.6756E-11	1.6740E-11	0.10
THYMUS	1.2029E-11	1.2010E-11	0.16
UTERUS	3.7464E-11	3.7450E-11	0.04
ET	1.1573E-11	1.1560E-11	0.11
LUNG	1.2954E-11	1.2950E-11	0.03
COLON	4.1576E-08	4.1560E-08	0.04
ET1	1.1573E-11	1.1560E-11	0.11
ET2	1.1573E-11	1.1560E-11	0.11
LN(ET)	1.1573E-11	1.1560E-11	0.11
BBsec	1.2954E-11	1.2940E-11	0.11
BBbas	1.2954E-11	1.2940E-11	0.11
bb	1.2954E-11	1.2940E-11	0.11
AI	1.2954E-11	1.2940E-11	0.11
LN(TH)	1.2954E-11	1.2940E-11	0.11
ESOPHAGUS	1.2029E-11	1.2010E-11	0.16
REMAINDER	**9.4866E-11**	**9.4900E-11**	**-0.04**
C.E.D.	**5.2216E-09**	**5.2190E-09**	**0.05**
Maximum			**0.16**

C.10.16. ^{249}Cf – Californium-249

Maximum difference in ***Effective Dose***: **-0.18%** (Inhalation).
Maximum difference in ***Organ Dose***: -**0.22%** (Inhalation - Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.21%**.

C.10.16.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.28E-08	3.28E-08	-0.05
URIN BLADDER	8.26E-09	8.26E-09	-0.05
BRAIN	1.27E-08	1.27E-08	-0.07
BREAST	8.47E-09	8.48E-09	-0.05
GALL BLADDER	3.23E-08	N/A	N/A
HEART	1.67E-08	N/A	N/A
KIDNEYS	2.18E-08	2.18E-08	-0.05
LIVER	1.15E-04	1.16E-04	-0.16
MUSCLE	1.24E-08	1.24E-08	-0.08
OVARIES	1.72E-05	1.72E-05	-0.19
PANCREAS	2.26E-08	2.26E-08	-0.04
TESTES	1.72E-05	1.72E-05	-0.20
THYROID	9.92E-09	9.93E-09	-0.06
R.B.M.	1.35E-04	1.35E-04	-0.20
BONE SURFACE	1.69E-03	1.69E-03	-0.17
STOMACH	1.23E-08	1.24E-08	-0.06
S.I.	1.83E-08	1.83E-08	-0.07
U.L.I.	2.60E-08	2.60E-08	-0.03
L.L.I.	4.38E-08	4.38E-08	-0.04
SKIN	7.89E-09	7.89E-09	-0.05
SPLEEN	1.09E-08	1.09E-08	-0.05
THYMUS	1.03E-08	1.03E-08	-0.08
UTERUS	1.23E-08	1.23E-08	-0.03
ET	1.42E-05	1.42E-05	-0.02
LUNG	2.57E-05	2.58E-05	-0.22
COLON	3.37E-08	3.37E-08	0.00
ET1	2.38E-04	2.38E-04	0.01
ET2	1.40E-05	1.40E-05	-0.02
LN(ET)	6.56E-07	6.56E-07	-0.04
BBsec	7.58E-05	7.60E-05	-0.21
BBbas	1.27E-05	1.27E-05	-0.19
bb	2.38E-05	2.37E-05	0.24
AI	9.24E-06	9.24E-06	-0.01
LN(TH)	3.01E-06	3.02E-06	-0.03
ESOPHAGUS	1.03E-08	1.03E-08	-0.08
REMAINDER	**1.96E-08**	**1.96E-08**	**-0.10**
C.E.D.	**4.54E-05**	**4.55E-05**	**-0.18**
Maximum			**0.24**

C.10.16.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.86E-10	2.86E-10	-0.03
URIN BLADDER	1.89E-10	1.89E-10	-0.03
BRAIN	1.04E-10	1.04E-10	-0.07
BREAST	7.00E-11	7.00E-11	-0.03
GALL BLADDER	3.73E-10	N/A	N/A
HEART	1.40E-10	N/A	N/A
KIDNEYS	2.27E-10	2.27E-10	-0.04
LIVER	9.38E-07	9.39E-07	-0.13
MUSCLE	1.43E-10	1.43E-10	-0.05
OVARIES	1.41E-07	1.41E-07	-0.16
PANCREAS	2.26E-10	2.26E-10	-0.04
TESTES	1.40E-07	1.41E-07	-0.21
THYROID	8.02E-11	8.03E-11	-0.04
R.B.M.	1.10E-06	1.10E-06	-0.17
BONE SURFACE	1.37E-05	1.38E-05	-0.17
STOMACH	1.59E-09	1.59E-09	-0.01
S.I.	3.96E-09	3.96E-09	0.01
U.L.I.	2.17E-08	2.17E-08	-0.01
L.L.I.	6.29E-08	6.29E-08	0.00
SKIN	7.83E-11	7.83E-11	-0.03
SPLEEN	1.22E-10	1.22E-10	-0.02
THYMUS	8.36E-11	8.37E-11	-0.03
UTERUS	2.71E-10	2.71E-10	-0.01
ET	8.02E-11	8.03E-11	-0.04
LUNG	1.38E-10	1.38E-10	-0.11
COLON	3.96E-08	3.95E-08	0.04
ET1	8.02E-11	8.03E-11	-0.04
ET2	8.02E-11	8.03E-11	-0.04
LN(ET)	8.02E-11	8.03E-11	-0.04
BBsec	1.38E-10	1.38E-10	-0.04
BBbas	1.38E-10	1.38E-10	-0.04
bb	1.38E-10	1.38E-10	-0.04
AI	1.38E-10	1.38E-10	-0.04
LN(TH)	1.38E-10	1.38E-10	-0.04
ESOPHAGUS	8.36E-11	8.37E-11	-0.03
REMAINDER	**2.22E-10**	**2.22E-10**	**-0.07**
C.E.D.	**3.49E-07**	**3.50E-07**	**-0.18**
Maximum			**-0.21**

C.10.17. ^{252}Cf – Californium-252

Maximum difference in ***Effective Dose***: **-0.28%** (Inhalation – type “M”).
Maximum difference in ***Organ Dose***: **-0.81%** (Inhalation – type “M” – LN_{TH}).
Maximum difference for ***Systemic Organ***: **-0.80%**.

C.10.17.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.3296E-08	7.3320E-08	-0.03
URIN BLADDER	1.4262E-08	1.4270E-08	-0.06
BRAIN	2.4694E-08	2.4710E-08	-0.06
BREAST	2.2815E-08	2.2830E-08	-0.07
GALL BLADDER	8.1081E-08	N/A	N/A
HEART	4.3511E-08	N/A	N/A
KIDNEYS	4.5906E-08	4.5920E-08	-0.03
LIVER	3.2403E-05	3.2660E-05	-0.79
MUSCLE	2.6943E-08	2.6960E-08	-0.06
OVARIES	2.6589E-06	2.6800E-06	-0.79
PANCREAS	4.9435E-08	4.9450E-08	-0.03
TESTES	2.6391E-06	2.6600E-06	-0.79
THYROID	1.9455E-08	1.9470E-08	-0.08
R.B.M.	2.7270E-05	2.7280E-05	-0.04
BONE SURFACE	3.3943E-04	3.3950E-04	-0.02
STOMACH	2.7197E-08	2.7210E-08	-0.05
S.I.	3.7462E-08	3.7480E-08	-0.05
U.L.I.	5.7849E-08	5.7860E-08	-0.02
L.L.I.	9.4718E-08	9.4730E-08	-0.01
SKIN	1.6716E-08	1.6730E-08	-0.08
SPLEEN	2.3933E-08	2.3940E-08	-0.03
THYMUS	2.6164E-08	2.6180E-08	-0.06
UTERUS	2.1344E-08	2.1360E-08	-0.07
ET	1.6664E-05	1.6670E-05	-0.04
LUNG	3.3897E-05	3.4000E-05	-0.30
COLON	7.3792E-08	7.3790E-08	0.00
ET1	6.2957E-04	6.2950E-04	0.01
ET2	1.6065E-05	1.6070E-05	-0.03
LN(ET)	1.0969E-06	1.1050E-06	-0.73
BBsec	8.3907E-05	8.4090E-05	-0.22
BBbas	1.8905E-05	1.8950E-05	-0.24
bb	3.3647E-05	3.3570E-05	0.23
AI	1.6725E-05	1.6860E-05	-0.80
LN(TH)	5.0439E-06	5.0850E-06	-0.81
ESOPHAGUS	2.6164E-08	2.6180E-08	-0.06
REMAINDER	**3.5425E-08**	**3.5450E-08**	**-0.07**
C.E.D.	**1.2904E-05**	**1.2940E-05**	**-0.28**
Maximum			**-0.81**

C.10.17.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.4049E-10	9.4060E-10	-0.01
URIN BLADDER	2.3478E-09	2.3480E-09	-0.01
BRAIN	2.1016E-10	2.1020E-10	-0.02
BREAST	2.2080E-10	2.2090E-10	-0.05
GALL BLADDER	2.7526E-09	N/A	N/A
HEART	4.4711E-10	N/A	N/A
KIDNEYS	1.2272E-09	1.2270E-09	0.02
LIVER	2.7846E-07	2.8070E-07	-0.80
MUSCLE	1.0368E-09	1.0370E-09	-0.02
OVARIES	3.1045E-08	3.1230E-08	-0.59
PANCREAS	1.1921E-09	1.1920E-09	0.01
TESTES	2.3261E-08	2.3440E-08	-0.76
THYROID	1.6247E-10	1.6250E-10	-0.02
R.B.M.	2.3510E-07	2.3510E-07	0.00
BONE SURFACE	2.9121E-06	2.9120E-06	0.00
STOMACH	5.2486E-09	5.2490E-09	-0.01
S.I.	1.4695E-08	1.4690E-08	0.03
U.L.I.	5.6802E-08	5.6800E-08	0.00
L.L.I.	1.5316E-07	1.5320E-07	-0.03
SKIN	4.0900E-10	4.0910E-10	-0.02
SPLEEN	7.6759E-10	7.6770E-10	-0.01
THYMUS	2.2051E-10	2.2060E-10	-0.04
UTERUS	3.3735E-09	3.3740E-09	-0.01
ET	1.6247E-10	1.6250E-10	-0.02
LUNG	4.0675E-10	4.0720E-10	-0.11
COLON	9.8470E-08	9.8430E-08	0.04
ET1	1.6247E-10	1.6250E-10	-0.02
ET2	1.6247E-10	1.6250E-10	-0.02
LN(ET)	1.6247E-10	1.6250E-10	-0.02
BBsec	4.0675E-10	4.0680E-10	-0.01
BBbas	4.0675E-10	4.0680E-10	-0.01
bb	4.0675E-10	4.0680E-10	-0.01
AI	4.0675E-10	4.0680E-10	-0.01
LN(TH)	4.0675E-10	4.0680E-10	-0.01
ESOPHAGUS	2.2051E-10	2.2060E-10	-0.04
REMAINDER	**1.2893E-09**	**1.2900E-09**	**-0.05**
C.E.D.	**9.0176E-08**	**9.0320E-08**	**-0.16**
Maximum			**-0.80**

C.10.18. ^{36}Cl – Chlorine-36

Maximum difference in ***Effective Dose***: **-0.26%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.28%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.03%**.

C.10.18.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.89E-10	3.89E-10	-0.01
URIN BLADDER	1.01E-09	1.01E-09	-0.01
BRAIN	3.89E-10	3.89E-10	-0.02
BREAST	3.89E-10	3.89E-10	-0.02
GALL BLADDER	3.89E-10	N/A	N/A
HEART	3.89E-10	N/A	N/A
KIDNEYS	3.89E-10	3.89E-10	-0.02
LIVER	3.89E-10	3.89E-10	-0.02
MUSCLE	3.89E-10	3.89E-10	-0.02
OVARIES	3.89E-10	3.89E-10	-0.01
PANCREAS	3.89E-10	3.89E-10	-0.01
TESTES	3.89E-10	3.89E-10	-0.02
THYROID	3.89E-10	3.89E-10	-0.02
R.B.M.	3.89E-10	3.89E-10	-0.02
BONE SURFACE	3.89E-10	3.89E-10	-0.01
STOMACH	4.52E-10	4.52E-10	-0.01
S.I.	3.90E-10	3.90E-10	-0.02
U.L.I.	4.21E-10	4.21E-10	-0.02

L.L.I.	4.83E-10	4.83E-10	-0.02
SKIN	3.89E-10	3.89E-10	-0.03
SPLEEN	3.89E-10	3.89E-10	-0.02
THYMUS	3.89E-10	3.89E-10	-0.02
UTERUS	3.89E-10	3.89E-10	-0.01
ET	2.61E-09	2.61E-09	0.02
LUNG	4.14E-10	4.14E-10	-0.14
COLON	4.48E-10	4.48E-10	0.00
ET1	1.87E-06	1.87E-06	0.03
ET2	7.40E-10	7.40E-10	0.00
LN(ET)	3.90E-10	3.90E-10	-0.01
BBsec	4.60E-10	4.60E-10	-0.05
BBbas	4.48E-10	4.49E-10	-0.03
bb	3.96E-10	3.96E-10	-0.01
AI	3.90E-10	3.90E-10	-0.01
LN(TH)	3.89E-10	3.89E-10	-0.02
ESOPHAGUS	3.89E-10	3.89E-10	-0.02
REMAINDER	**1.50E-09**	**1.50E-09**	**0.00**
C.E.D.	**4.93E-10**	**4.93E-10**	**-0.01**
Maximum			**-0.14**

C.10.18.2 Acute Inhalation (Type M: $f_1 = 0.99$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.87E-10	3.87E-10	-0.02
URIN BLADDER	1.01E-09	1.01E-09	0.02
BRAIN	3.87E-10	3.87E-10	-0.01
BREAST	3.87E-10	3.87E-10	-0.01
GALL BLADDER	3.87E-10	N/A	N/A
HEART	3.87E-10	N/A	N/A
KIDNEYS	3.87E-10	3.87E-10	-0.03
LIVER	3.87E-10	3.87E-10	-0.01
MUSCLE	3.87E-10	3.87E-10	-0.02
OVARIES	3.87E-10	3.87E-10	-0.01
PANCREAS	3.87E-10	3.87E-10	-0.01
TESTES	3.87E-10	3.87E-10	-0.02
THYROID	3.87E-10	3.87E-10	-0.02
R.B.M.	3.87E-10	3.87E-10	-0.02
BONE SURFACE	3.87E-10	3.87E-10	-0.02
STOMACH	5.19E-10	5.19E-10	-0.02
S.I.	3.90E-10	3.90E-10	-0.01
U.L.I.	4.29E-10	4.29E-10	-0.02
L.L.I.	5.12E-10	5.12E-10	-0.01
SKIN	3.87E-10	3.87E-10	-0.01
SPLEEN	3.87E-10	3.87E-10	-0.01
THYMUS	3.87E-10	3.87E-10	-0.02
UTERUS	3.87E-10	3.87E-10	-0.01
ET	1.06E-08	1.06E-08	-0.01
LUNG	3.88E-08	3.89E-08	-0.28
COLON	4.65E-10	4.65E-10	-0.01
ET1	1.87E-06	1.87E-06	0.03
ET2	8.75E-09	8.75E-09	-0.02
LN(ET)	1.90E-09	1.90E-09	-0.02
BBsec	7.34E-08	7.36E-08	-0.20
BBbas	6.26E-08	6.27E-08	-0.21
bb	2.63E-08	2.63E-08	0.05
AI	2.21E-08	2.22E-08	-0.02
LN(TH)	3.92E-09	3.92E-09	-0.05
ESOPHAGUS	3.87E-10	3.87E-10	-0.02
REMAINDER	**3.92E-10**	**3.92E-10**	**-0.01**
C.E.D.	**5.05E-09**	**5.06E-09**	**-0.26**
Maximum			**-0.28**

C.10.18.3. Acute Ingestion ($f_1 = 0.99$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.03E-10	8.03E-10	-0.01
URIN BLADDER	2.09E-09	2.09E-09	0.00
BRAIN	8.03E-10	8.03E-10	-0.01
BREAST	8.03E-10	8.03E-10	0.00
GALL BLADDER	8.03E-10	N/A	N/A
HEART	8.03E-10	N/A	N/A
KIDNEYS	8.03E-10	8.03E-10	-0.01
LIVER	8.03E-10	8.03E-10	-0.01
MUSCLE	8.03E-10	8.03E-10	-0.01
OVARIES	8.03E-10	8.03E-10	-0.01
PANCREAS	8.03E-10	8.03E-10	0.00
TESTES	8.03E-10	8.03E-10	-0.01
THYROID	8.03E-10	8.03E-10	-0.01
R.B.M.	8.03E-10	8.03E-10	-0.01
BONE SURFACE	8.03E-10	8.03E-10	-0.01
STOMACH	1.12E-09	1.12E-09	0.01
S.I.	8.11E-10	8.11E-10	-0.01
U.L.I.	8.97E-10	8.97E-10	0.00
L.L.I.	1.08E-09	1.08E-09	0.00
SKIN	8.03E-10	8.03E-10	-0.01
SPLEEN	8.03E-10	8.03E-10	-0.01
THYMUS	8.03E-10	8.03E-10	-0.01
UTERUS	8.03E-10	8.03E-10	0.00
ET	8.03E-10	8.03E-10	-0.01
LUNG	8.03E-10	8.04E-10	-0.11
COLON	9.76E-10	9.76E-10	0.01
ET1	8.03E-10	8.03E-10	-0.01
ET2	8.03E-10	8.03E-10	-0.01
LN(ET)	8.03E-10	8.03E-10	-0.01
BBsec	8.03E-10	8.03E-10	-0.01
BBbas	8.03E-10	8.03E-10	-0.01
bb	8.03E-10	8.03E-10	-0.01
AI	8.03E-10	8.03E-10	-0.01
LN(TH)	8.03E-10	8.03E-10	-0.01
ESOPHAGUS	8.03E-10	8.03E-10	-0.01
REMAINDER	**8.03E-10**	**8.03E-10**	**0.00**
C.E.D.	**9.26E-10**	**9.26E-10**	**-0.02**
Maximum			**-0.11**

C.10.19. ^{242}Cm – Curium-242

Maximum difference in ***Effective Dose***: **-0.22%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.26%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.13%**.

C.10.19.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.3694E-08	2.3710E-08	-0.07
URIN BLADDER	2.3725E-08	2.3740E-08	-0.06
BRAIN	2.3692E-08	2.3710E-08	-0.08
BREAST	2.3692E-08	2.3710E-08	-0.08
GALL BLADDER	2.3696E-08	N/A	N/A
HEART	2.3693E-08	N/A	N/A
KIDNEYS	3.9047E-07	3.9060E-07	-0.03
LIVER	5.0301E-06	5.0310E-06	-0.02
MUSCLE	2.3693E-08	2.3710E-08	-0.07
OVARIES	3.3421E-07	3.3450E-07	-0.09
PANCREAS	2.3692E-08	2.3710E-08	-0.08
TESTES	3.3163E-07	3.3200E-07	-0.11
THYROID	2.3692E-08	2.3710E-08	-0.08
R.B.M.	1.3187E-06	1.3190E-06	-0.02
BONE SURFACE	1.9086E-05	1.9110E-05	-0.13
STOMACH	2.4281E-08	2.4300E-08	-0.08
S.I.	2.5163E-08	2.5180E-08	-0.07
U.L.I.	3.2591E-08	3.2610E-08	-0.06
L.L.I.	4.9688E-08	4.9710E-08	-0.04
SKIN	2.3692E-08	2.3710E-08	-0.08
SPLEEN	2.3692E-08	2.3710E-08	-0.08
THYMUS	2.3692E-08	2.3710E-08	-0.08
UTERUS	2.3692E-08	2.3710E-08	-0.08
ET	9.0399E-06	9.0420E-06	-0.02
LUNG	2.4735E-05	2.4800E-05	-0.26
COLON	3.9984E-08	3.9990E-08	-0.02
ET1	6.2994E-04	6.2990E-04	0.01
ET2	8.4266E-06	8.4290E-06	-0.03
LN(ET)	2.3882E-07	2.3890E-07	-0.03
BBsec	7.7269E-05	7.7430E-05	-0.21
BBbas	1.7035E-05	1.7070E-05	-0.21
bb	2.1250E-05	2.1200E-05	0.24
AI	5.8747E-06	5.8750E-06	-0.01
LN(TH)	1.3011E-06	1.3020E-06	-0.07
ESOPHAGUS	2.3692E-08	2.3710E-08	-0.08
REMAINDER	**3.1817E-08**	**3.1840E-08**	**-0.07**
C.E.D.	**3.6499E-06**	**3.6580E-06**	**-0.22**
Maximum			**-0.26**

C.10.19.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.2622E-10	2.2630E-10	-0.04
URIN BLADDER	2.2665E-10	2.2670E-10	-0.02
BRAIN	2.2621E-10	2.2630E-10	-0.04
BREAST	2.2621E-10	2.2630E-10	-0.04
GALL BLADDER	2.2648E-10	N/A	N/A
HEART	2.2621E-10	N/A	N/A
KIDNEYS	3.9440E-09	3.9450E-09	-0.03
LIVER	5.0857E-08	5.0860E-08	-0.01
MUSCLE	2.2632E-10	2.2640E-10	-0.04
OVARIES	3.2272E-09	3.2290E-09	-0.06
PANCREAS	2.2625E-10	2.2630E-10	-0.02
TESTES	3.1994E-09	3.2020E-09	-0.08
THYROID	2.2621E-10	2.2630E-10	-0.04
R.B.M.	1.3139E-08	1.3140E-08	-0.01
BONE SURFACE	1.8516E-07	1.8530E-07	-0.08
STOMACH	1.6444E-09	1.6440E-09	0.02
S.I.	3.7677E-09	3.7680E-09	-0.01
U.L.I.	2.1610E-08	2.1610E-08	0.00
L.L.I.	6.2690E-08	6.2690E-08	0.00
SKIN	2.2622E-10	2.2630E-10	-0.04
SPLEEN	2.2622E-10	2.2630E-10	-0.04
THYMUS	2.2621E-10	2.2630E-10	-0.04
UTERUS	2.2632E-10	2.2640E-10	-0.04
ET	2.2621E-10	2.2630E-10	-0.04
LUNG	2.2622E-10	2.2650E-10	-0.12
COLON	3.9374E-08	3.9360E-08	0.04
ET1	2.2621E-10	2.2630E-10	-0.04
ET2	2.2621E-10	2.2630E-10	-0.04
LN(ET)	2.2621E-10	2.2630E-10	-0.04
BBsec	2.2622E-10	2.2630E-10	-0.04
BBbas	2.2622E-10	2.2630E-10	-0.04
bb	2.2622E-10	2.2630E-10	-0.04
AI	2.2622E-10	2.2630E-10	-0.04
LN(TH)	2.2622E-10	2.2630E-10	-0.04
ESOPHAGUS	2.2621E-10	2.2630E-10	-0.04
REMAINDER	**3.3747E-10**	**3.3760E-10**	**-0.04**
C.E.D.	**1.1630E-08**	**1.1630E-08**	**0.00**
Maximum			**-0.12**

C.10.20. ^{243}Cm – Curium-243

Maximum difference in ***Effective Dose***: **-0.12%** (Inhalation).
Maximum difference in ***Organ Dose***: **+0.20%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.11%**.

C.10.20.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.1179E-06	1.1170E-06	0.08
URIN BLADDER	1.1135E-06	1.1130E-06	0.04
BRAIN	1.1146E-06	1.1140E-06	0.05
BREAST	1.1132E-06	1.1130E-06	0.02
GALL BLADDER	1.1181E-06	N/A	N/A
HEART	1.1151E-06	N/A	N/A
KIDNEYS	4.5440E-06	4.5460E-06	-0.04
LIVER	5.4748E-05	5.4780E-05	-0.06
MUSCLE	1.1143E-06	1.1140E-06	0.03
OVARIES	1.4634E-05	1.4640E-05	-0.04
PANCREAS	1.1162E-06	1.1160E-06	0.02
TESTES	1.4519E-05	1.4530E-05	-0.08
THYROID	1.1139E-06	1.1130E-06	0.08
R.B.M.	2.9339E-05	2.9360E-05	-0.07
BONE SURFACE	7.5384E-04	7.5470E-04	-0.11
STOMACH	1.1146E-06	1.1140E-06	0.05
S.I.	1.1164E-06	1.1160E-06	0.04
U.L.I.	1.1245E-06	1.1240E-06	0.04
L.L.I.	1.1431E-06	1.1420E-06	0.10

SKIN	1.1132E-06	1.1130E-06	0.02
SPLEEN	1.1140E-06	1.1130E-06	0.09
THYMUS	1.1138E-06	1.1130E-06	0.07
UTERUS	1.1141E-06	1.1130E-06	0.10
ET	1.5129E-05	1.5130E-05	-0.01
LUNG	2.6506E-05	2.6560E-05	-0.20
COLON	1.1325E-06	1.1320E-06	0.04
ET1	2.2164E-04	2.2160E-04	0.02
ET2	1.4935E-05	1.4940E-05	-0.03
LN(ET)	1.7415E-06	1.7410E-06	0.03
BBsec	7.5854E-05	7.6020E-05	-0.22
BBbas	1.3341E-05	1.3370E-05	-0.22
bb	2.4778E-05	2.4720E-05	0.23
AI	1.0210E-05	1.0210E-05	0.00
LN(TH)	4.0472E-06	4.0480E-06	-0.02
ESOPHAGUS	1.1138E-06	1.1130E-06	0.07
REMAINDER	**1.1558E-06**	**1.1550E-06**	**0.07**
C.E.D.	**2.0465E-05**	**2.0490E-05**	**-0.12**
Maximum			**0.23**

C.10.20.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.1586E-09	9.1520E-09	0.07
URIN BLADDER	9.1673E-09	9.1610E-09	0.07
BRAIN	9.1247E-09	9.1180E-09	0.07
BREAST	9.1130E-09	9.1070E-09	0.07
GALL BLADDER	9.2001E-09	N/A	N/A
HEART	9.1295E-09	N/A	N/A
KIDNEYS	3.7135E-08	3.7150E-08	-0.04
LIVER	4.4719E-07	4.4740E-07	-0.05
MUSCLE	9.1393E-09	9.1330E-09	0.07
OVARIES	1.1976E-07	1.1980E-07	-0.03
PANCREAS	9.1546E-09	9.1480E-09	0.07
TESTES	1.1867E-07	1.1870E-07	-0.03
THYROID	9.1188E-09	9.1130E-09	0.06
R.B.M.	2.3969E-07	2.3980E-07	-0.05
BONE SURFACE	6.1620E-06	6.1690E-06	-0.11
STOMACH	1.0659E-08	1.0650E-08	0.08
S.I.	1.3011E-08	1.3000E-08	0.08
U.L.I.	3.1993E-08	3.1990E-08	0.01
L.L.I.	7.5950E-08	7.5940E-08	0.01
SKIN	9.1179E-09	9.1120E-09	0.06
SPLEEN	9.1328E-09	9.1270E-09	0.06
THYMUS	9.1176E-09	9.1110E-09	0.07
UTERUS	9.1927E-09	9.1860E-09	0.07
ET	9.1188E-09	9.1130E-09	0.06
LUNG	9.1289E-09	9.1320E-09	-0.03
COLON	5.1002E-08	5.0980E-08	0.04
ET1	9.1188E-09	9.1130E-09	0.06
ET2	9.1188E-09	9.1130E-09	0.06
LN(ET)	9.1188E-09	9.1130E-09	0.06
BBsec	9.1289E-09	9.1230E-09	0.06
BBbas	9.1289E-09	9.1230E-09	0.06
bb	9.1289E-09	9.1230E-09	0.06
AI	9.1289E-09	9.1230E-09	0.06
LN(TH)	9.1289E-09	9.1230E-09	0.06
ESOPHAGUS	9.1176E-09	9.1110E-09	0.07
REMAINDER	**9.5015E-09**	**9.4960E-09**	**0.06**
C.E.D.	**1.4758E-07**	**1.4770E-07**	**-0.08**
Maximum			**-0.11**

C.10.21. ^{244}Cm – Curium-244

Maximum difference in ***Effective Dose***: **-0.21%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.26%** (Inhalation – Bone Surface/Ingestion – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.26%**.

C.10.21.1 Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.2367E-07	8.2520E-07	-0.19
URIN BLADDER	8.2375E-07	8.2520E-07	-0.18
BRAIN	8.2366E-07	8.2510E-07	-0.17
BREAST	8.2365E-07	8.2510E-07	-0.18
GALL BLADDER	8.2369E-07	N/A	N/A
HEART	8.2365E-07	N/A	N/A
KIDNEYS	3.9815E-06	3.9870E-06	-0.14
LIVER	4.8235E-05	4.8290E-05	-0.11
MUSCLE	8.2366E-07	8.2510E-07	-0.17
OVARIES	1.1695E-05	1.1720E-05	-0.21
PANCREAS	8.2365E-07	8.2510E-07	-0.18
TESTES	1.1605E-05	1.1630E-05	-0.21
THYROID	8.2365E-07	8.2510E-07	-0.18
R.B.M.	2.5091E-05	2.5130E-05	-0.16
BONE SURFACE	5.9951E-04	6.0110E-04	-0.26
STOMACH	8.2421E-07	8.2570E-07	-0.18
S.I.	8.2507E-07	8.2660E-07	-0.19
U.L.I.	8.3230E-07	8.3380E-07	-0.18
L.L.I.	8.4904E-07	8.5050E-07	-0.17
SKIN	8.2365E-07	8.2510E-07	-0.18
SPLEEN	8.2365E-07	8.2510E-07	-0.18
THYMUS	8.2365E-07	8.2510E-07	-0.18
UTERUS	8.2364E-07	8.2510E-07	-0.18
ET	1.4730E-05	1.4740E-05	-0.07
LUNG	2.6015E-05	2.6070E-05	-0.21
COLON	8.3954E-07	8.4100E-07	-0.17
ET1	1.9511E-04	1.9510E-04	0.01
ET2	1.4562E-05	1.4570E-05	-0.05
LN(ET)	1.4397E-06	1.4410E-06	-0.09
BBsec	7.4987E-05	7.5150E-05	-0.22
BBbas	1.2622E-05	1.2650E-05	-0.22
bb	2.4460E-05	2.4410E-05	0.20
AI	9.8488E-06	9.8520E-06	-0.03
LN(TH)	3.7208E-06	3.7230E-06	-0.06
ESOPHAGUS	8.2365E-07	8.2510E-07	-0.18
REMAINDER	**8.6230E-07**	**8.6380E-07**	**-0.17**
C.E.D.	**1.7294E-05**	**1.7330E-05**	**-0.21**
Maximum			**-0.26**

C.10.21.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.7574E-09	6.7690E-09	-0.17
URIN BLADDER	6.7582E-09	6.7700E-09	-0.17
BRAIN	6.7573E-09	6.7690E-09	-0.17
BREAST	6.7572E-09	6.7690E-09	-0.17
GALL BLADDER	6.7578E-09	N/A	N/A
HEART	6.7572E-09	N/A	N/A
KIDNEYS	3.2614E-08	3.2650E-08	-0.11
LIVER	3.9510E-07	3.9550E-07	-0.10
MUSCLE	6.7574E-09	6.7690E-09	-0.17
OVARIES	9.5838E-08	9.6030E-08	-0.20
PANCREAS	6.7573E-09	6.7690E-09	-0.17
TESTES	9.5092E-08	9.5290E-08	-0.21
THYROID	6.7572E-09	6.7690E-09	-0.17
R.B.M.	2.0554E-07	2.0580E-07	-0.13
BONE SURFACE	4.9133E-06	4.9250E-06	-0.24
STOMACH	8.1036E-09	8.1150E-09	-0.14
S.I.	1.0122E-08	1.0130E-08	-0.08
U.L.I.	2.7119E-08	2.7130E-08	-0.04
L.L.I.	6.6485E-08	6.6500E-08	-0.02
SKIN	6.7572E-09	6.7690E-09	-0.17
SPLEEN	6.7572E-09	6.7690E-09	-0.17
THYMUS	6.7572E-09	6.7690E-09	-0.17
UTERUS	6.7574E-09	6.7690E-09	-0.17
ET	6.7572E-09	6.7690E-09	-0.17
LUNG	6.7573E-09	6.7750E-09	-0.26
COLON	4.4142E-08	4.4140E-08	0.00
ET1	6.7572E-09	6.7690E-09	-0.17
ET2	6.7572E-09	6.7690E-09	-0.17
LN(ET)	6.7572E-09	6.7690E-09	-0.17
BBsec	6.7573E-09	6.7690E-09	-0.17
BBbas	6.7573E-09	6.7690E-09	-0.17
bb	6.7573E-09	6.7690E-09	-0.17
AI	6.7573E-09	6.7690E-09	-0.17
LN(TH)	6.7573E-09	6.7690E-09	-0.17
ESOPHAGUS	6.7572E-09	6.7690E-09	-0.17
REMAINDER	**7.0880E-09**	**7.1000E-09**	**-0.17**
C.E.D.	**1.2157E-07**	**1.2180E-07**	**-0.19**
Maximum			**-0.26**

C.10.22. ^{57}Co – Cobalt-57

Maximum difference in ***Effective Dose***: **-0.14%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.26%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.07%**.

C.10.22.1. Acute Inhalation (Type M: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.6178E-10	1.6180E-10	-0.01
URIN BLADDER	8.3420E-11	8.3420E-11	0.00
BRAIN	5.0022E-11	5.0000E-11	0.04
BREAST	1.2902E-10	1.2900E-10	0.02
GALL BLADDER	1.2212E-10	N/A	N/A
HEART	2.3022E-10	N/A	N/A
KIDNEYS	9.2108E-11	9.2090E-11	0.02
LIVER	2.2950E-10	2.2950E-10	0.00
MUSCLE	9.3232E-11	9.3210E-11	0.02
OVARIES	1.1867E-10	1.1860E-10	0.06
PANCREAS	1.4337E-10	1.4340E-10	-0.02
TESTES	4.9734E-11	4.9710E-11	0.05
THYROID	8.9178E-11	8.9160E-11	0.02
R.B.M.	1.0572E-10	1.0570E-10	0.02
BONE SURFACE	1.6635E-10	1.6630E-10	0.03
STOMACH	1.2616E-10	1.2610E-10	0.05
S.I.	1.3953E-10	1.3950E-10	0.02
U.L.I.	2.8773E-10	2.8760E-10	0.05
L.L.I.	6.2552E-10	6.2530E-10	0.04
SKIN	5.3237E-11	5.3220E-11	0.03
SPLEEN	1.2354E-10	1.2350E-10	0.03
THYMUS	1.7058E-10	1.7060E-10	-0.01
UTERUS	8.9210E-11	8.9190E-11	0.02
ET	1.5158E-09	1.5160E-09	-0.01
LUNG	2.0366E-09	2.0420E-09	-0.26
COLON	4.3380E-10	4.3350E-10	0.07
ET1	8.7655E-08	8.7650E-08	0.01
ET2	1.4297E-09	1.4300E-09	-0.02
LN(ET)	1.2605E-09	1.2600E-09	0.04
BBsec	3.5996E-09	3.6060E-09	-0.18
BBbas	2.9746E-09	2.9800E-09	-0.18
bb	1.0286E-09	1.0280E-09	0.06
AI	1.7981E-09	1.7980E-09	0.01
LN(TH)	6.9047E-10	6.9060E-10	-0.02
ESOPHAGUS	1.7058E-10	1.7060E-10	-0.01
REMAINDER	**9.3322E-11**	**9.3250E-11**	**0.08**
C.E.D.	**3.8995E-10**	**3.9050E-10**	**-0.14**
Maximum			**-0.26**

C.10.22.2. Acute Inhalation (Type S: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.4841E-10	2.4840E-10	0.00
URIN BLADDER	3.9756E-11	3.9760E-11	-0.01
BRAIN	2.3085E-11	2.3080E-11	0.02
BREAST	2.3308E-10	2.3310E-10	-0.01
GALL BLADDER	1.1191E-10	N/A	N/A
HEART	4.4356E-10	N/A	N/A
KIDNEYS	8.8240E-11	8.8240E-11	0.00
LIVER	2.3920E-10	2.3920E-10	0.00
MUSCLE	1.1342E-10	1.1340E-10	0.02
OVARIES	8.4944E-11	8.4940E-11	0.00
PANCREAS	1.9574E-10	1.9570E-10	0.02
TESTES	1.7260E-11	1.7250E-11	0.06
THYROID	1.0337E-10	1.0340E-10	-0.03
R.B.M.	1.3428E-10	1.3430E-10	-0.01
BONE SURFACE	2.0369E-10	2.0370E-10	0.00
STOMACH	1.5838E-10	1.5840E-10	-0.01
S.I.	1.1332E-10	1.1330E-10	0.02
U.L.I.	2.8138E-10	2.8140E-10	-0.01
L.L.I.	6.4970E-10	6.4970E-10	0.00
SKIN	5.1140E-11	5.1140E-11	0.00

SPLEEN	1.7901E-10	1.7900E-10	0.01
THYMUS	3.0462E-10	3.0460E-10	0.01
UTERUS	5.0547E-11	5.0540E-11	0.01
ET	1.9948E-09	1.9950E-09	-0.01
LUNG	3.6988E-09	3.7060E-09	-0.19
COLON	4.4065E-10	4.4050E-10	0.03
ET1	8.7826E-08	8.7820E-08	0.01
ET2	1.9090E-09	1.9090E-09	0.00
LN(ET)	1.7964E-09	1.7960E-09	0.02
BBsec	5.1267E-09	5.1350E-09	-0.16
BBbas	4.3304E-09	4.3370E-09	-0.15
bb	1.9960E-09	1.9950E-09	0.05
AI	4.3770E-09	4.3770E-09	0.00
LN(TH)	1.9506E-09	1.9510E-09	-0.02
ESOPHAGUS	3.0462E-10	3.0460E-10	0.01
REMAINDER	**1.1064E-10**	**1.1050E-10**	**0.13**
C.E.D.	**6.0292E-10**	**6.0370E-10**	**-0.13**
Maximum			**-0.19**

C.10.22.3 Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.7436E-11	7.7410E-11	0.03
URIN BLADDER	1.1449E-10	1.1450E-10	-0.01
BRAIN	4.5688E-11	4.5660E-11	0.06
BREAST	4.0539E-11	4.0510E-11	0.07
GALL BLADDER	1.2182E-10	N/A	N/A
HEART	6.0108E-11	N/A	N/A
KIDNEYS	7.9707E-11	7.9680E-11	0.03
LIVER	1.6498E-10	1.6500E-10	-0.01
MUSCLE	6.4902E-11	6.4870E-11	0.05
OVARIES	1.9976E-10	1.9970E-10	0.03
PANCREAS	8.7684E-11	8.7650E-11	0.04
TESTES	5.9274E-11	5.9250E-11	0.04
THYROID	5.3417E-11	5.3390E-11	0.05
R.B.M.	7.6578E-11	7.6550E-11	0.04
BONE SURFACE	1.1072E-10	1.1070E-10	0.02
STOMACH	1.1896E-10	1.1890E-10	0.05
S.I.	2.4261E-10	2.4260E-10	0.00
U.L.I.	5.8925E-10	5.8910E-10	0.03
L.L.I.	1.4014E-09	1.4010E-09	0.03
SKIN	4.0955E-11	4.0930E-11	0.06
SPLEEN	6.9724E-11	6.9700E-11	0.03
THYMUS	5.2598E-11	5.2570E-11	0.05
UTERUS	1.3001E-10	1.3000E-10	0.01
ET	5.3417E-11	5.3390E-11	0.05
LUNG	5.8338E-11	5.8370E-11	-0.05
COLON	9.4043E-10	9.3990E-10	0.06
ET1	5.3417E-11	5.3390E-11	0.05
ET2	5.3417E-11	5.3390E-11	0.05
LN(ET)	5.3417E-11	5.3390E-11	0.05
BBsec	5.8338E-11	5.8310E-11	0.05
BBbas	5.8338E-11	5.8310E-11	0.05
bb	5.8338E-11	5.8310E-11	0.05
AI	5.8338E-11	5.8310E-11	0.05
LN(TH)	5.8338E-11	5.8310E-11	0.05
ESOPHAGUS	5.2598E-11	5.2570E-11	0.05
REMAINDER	**6.8138E-11**	**6.8120E-11**	**0.03**
C.E.D.	**2.0949E-10**	**2.0940E-10**	**0.04**
Maximum			**0.07**

C.10.22.4 Acute Ingestion (f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.2847E-11	4.2830E-11	0.04
URIN BLADDER	8.3381E-11	8.3380E-11	0.00
BRAIN	2.2846E-11	2.2830E-11	0.07
BREAST	2.0693E-11	2.0680E-11	0.06
GALL BLADDER	8.4199E-11	N/A	N/A
HEART	3.1507E-11	N/A	N/A
KIDNEYS	4.9624E-11	4.9610E-11	0.03
LIVER	8.8586E-11	8.8580E-11	0.01
MUSCLE	4.0915E-11	4.0900E-11	0.04
OVARIES	1.7537E-10	1.7530E-10	0.04
PANCREAS	5.2819E-11	5.2800E-11	0.04
TESTES	3.6066E-11	3.6050E-11	0.04
THYROID	2.6744E-11	2.6730E-11	0.05
R.B.M.	5.1446E-11	5.1430E-11	0.03
BONE SURFACE	6.6965E-11	6.6950E-11	0.02
STOMACH	9.2247E-11	9.2230E-11	0.02
S.I.	2.2083E-10	2.2080E-10	0.01
U.L.I.	5.8465E-10	5.8460E-10	0.01
L.L.I.	1.4362E-09	1.4360E-09	0.01
SKIN	2.2937E-11	2.2920E-11	0.07
SPLEEN	4.2041E-11	4.2030E-11	0.03
THYMUS	2.6602E-11	2.6590E-11	0.05
UTERUS	1.0162E-10	1.0160E-10	0.02
ET	2.6744E-11	2.6730E-11	0.05
LUNG	3.0045E-11	3.0060E-11	-0.05
COLON	9.5287E-10	9.5240E-10	0.05
ET1	2.6744E-11	2.6730E-11	0.05
ET2	2.6744E-11	2.6730E-11	0.05
LN(ET)	2.6744E-11	2.6730E-11	0.05
BBsec	3.0045E-11	3.0030E-11	0.05
BBbas	3.0045E-11	3.0030E-11	0.05
bb	3.0045E-11	3.0030E-11	0.05
AI	3.0045E-11	3.0030E-11	0.05
LN(TH)	3.0045E-11	3.0030E-11	0.05
ESOPHAGUS	2.6602E-11	2.6590E-11	0.05
REMAINDER	**4.4112E-11**	**4.4110E-11**	**0.00**
C.E.D.	**1.8567E-10**	**1.8560E-10**	**0.04**
Maximum			**0.07**

C.10.23. ^{58}Co – Cobalt-58

Maximum difference in ***Effective Dose***: **-0.17%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.26%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.06%**.

C.10.23.1. Acute Inhalation (Type M: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.4099E-10	5.4100E-10	0.00
URIN BLADDER	2.7076E-10	2.7080E-10	-0.01
BRAIN	1.4205E-10	1.4210E-10	-0.04
BREAST	4.9153E-10	4.9160E-10	-0.01
GALL BLADDER	4.0407E-10	N/A	N/A
HEART	8.0466E-10	N/A	N/A
KIDNEYS	3.0979E-10	3.0980E-10	0.00
LIVER	6.0956E-10	6.0960E-10	-0.01
MUSCLE	3.2793E-10	3.2790E-10	0.01
OVARIES	5.4068E-10	5.4060E-10	0.01
PANCREAS	4.6315E-10	4.6320E-10	-0.01
TESTES	1.4116E-10	1.4120E-10	-0.03
THYROID	2.8971E-10	2.8970E-10	0.00
R.B.M.	3.9851E-10	3.9850E-10	0.00
BONE SURFACE	3.1842E-10	3.1840E-10	0.01
STOMACH	4.3208E-10	4.3210E-10	0.00
S.I.	5.3532E-10	5.3530E-10	0.00
U.L.I.	9.1319E-10	9.1300E-10	0.02
L.L.I.	1.7070E-09	1.7070E-09	0.00
SKIN	1.8180E-10	1.8180E-10	0.00
SPLEEN	4.2082E-10	4.2090E-10	-0.02
THYMUS	6.0306E-10	6.0310E-10	-0.01
UTERUS	3.2007E-10	3.2000E-10	0.02
ET	8.9716E-09	8.9710E-09	0.01
LUNG	5.7441E-09	5.7600E-09	-0.28
COLON	1.2564E-09	1.2560E-09	0.03
ET1	3.2248E-07	3.2250E-07	-0.01
ET2	8.6584E-09	8.6580E-09	0.00
LN(ET)	8.0927E-09	8.0920E-09	0.01
BBsec	1.1231E-08	1.1250E-08	-0.17
BBbas	9.5732E-09	9.5900E-09	-0.18
bb	3.7355E-09	3.7330E-09	0.07
AI	3.1056E-09	3.1060E-09	-0.01
LN(TH)	2.0559E-09	2.0560E-09	0.00
ESOPHAGUS	6.0306E-10	6.0310E-10	-0.01
REMAINDER	**4.6482E-09**	**4.6480E-09**	**0.00**
C.E.D.	**1.3985E-09**	**1.4000E-09**	**-0.11**
Maximum			**-0.28**

C.10.23.2. Acute Inhalation (Type S: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.3810E-10	6.3820E-10	-0.02
URIN BLADDER	1.8435E-10	1.8440E-10	-0.03
BRAIN	9.5322E-11	9.5320E-11	0.00
BREAST	6.4844E-10	6.4850E-10	-0.01
GALL BLADDER	3.6341E-10	N/A	N/A
HEART	1.0821E-09	N/A	N/A
KIDNEYS	2.9058E-10	2.9060E-10	-0.01
LIVER	5.9282E-10	5.9290E-10	-0.01
MUSCLE	3.4326E-10	3.4330E-10	-0.01
OVARIES	4.9949E-10	4.9950E-10	0.00
PANCREAS	5.0662E-10	5.0670E-10	-0.02
TESTES	7.5145E-11	7.5150E-11	-0.01
THYROID	2.9543E-10	2.9550E-10	-0.02
R.B.M.	4.3324E-10	4.3330E-10	-0.01
BONE SURFACE	3.1682E-10	3.1680E-10	0.01
STOMACH	4.6385E-10	4.6390E-10	-0.01
S.I.	5.0338E-10	5.0340E-10	0.00
U.L.I.	9.2448E-10	9.2450E-10	0.00
L.L.I.	1.7878E-09	1.7880E-09	-0.01
SKIN	1.7618E-10	1.7620E-10	-0.01
SPLEEN	4.8353E-10	4.8360E-10	-0.01
THYMUS	7.7509E-10	7.7520E-10	-0.01
UTERUS	2.5121E-10	2.5120E-10	0.00
ET	9.4521E-09	9.4520E-09	0.00
LUNG	7.8037E-09	7.8240E-09	-0.26
COLON	1.2978E-09	1.2970E-09	0.06
ET1	3.2267E-07	3.2260E-07	0.02
ET2	9.1394E-09	9.1390E-09	0.00
LN(ET)	8.3169E-09	8.3170E-09	0.00
BBsec	1.4461E-08	1.4490E-08	-0.20
BBbas	1.2400E-08	1.2420E-08	-0.16
bb	5.3355E-09	5.3330E-09	0.05
AI	4.6590E-09	4.6600E-09	-0.02
LN(TH)	3.0643E-09	3.0650E-09	-0.02
ESOPHAGUS	7.7509E-10	7.7520E-10	-0.01
REMAINDER	**4.8942E-09**	**4.8940E-09**	**0.00**
C.E.D.	**1.6742E-09**	**1.6770E-09**	**-0.17**
Maximum			**-0.26**

C.10.23.3. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.3004E-10	2.3000E-10	0.02
URIN BLADDER	4.6078E-10	4.6080E-10	0.00
BRAIN	1.0156E-10	1.0160E-10	-0.04
BREAST	1.0812E-10	1.0810E-10	0.02
GALL BLADDER	4.6263E-10	N/A	N/A
HEART	1.6442E-10	N/A	N/A
KIDNEYS	2.8030E-10	2.8030E-10	0.00
LIVER	3.9666E-10	3.9670E-10	-0.01
MUSCLE	2.3159E-10	2.3160E-10	0.00
OVARIES	1.1001E-09	1.1000E-09	0.01
PANCREAS	2.8873E-10	2.8870E-10	0.01
TESTES	2.1246E-10	2.1240E-10	0.03
THYROID	1.2880E-10	1.2880E-10	0.00
R.B.M.	3.0666E-10	3.0660E-10	0.02
BONE SURFACE	2.1543E-10	2.1540E-10	0.01
STOMACH	4.4032E-10	4.4030E-10	0.00
S.I.	1.0436E-09	1.0440E-09	-0.04
U.L.I.	1.9421E-09	1.9420E-09	0.01
L.L.I.	3.9187E-09	3.9180E-09	0.02
SKIN	1.2627E-10	1.2630E-10	-0.02
SPLEEN	2.2758E-10	2.2760E-10	-0.01
THYMUS	1.3533E-10	1.3530E-10	0.02
UTERUS	5.7381E-10	5.7380E-10	0.00
ET	1.2880E-10	1.2880E-10	0.00
LUNG	1.4705E-10	1.4720E-10	-0.10
COLON	2.7969E-09	2.7960E-09	0.03
ET1	1.2880E-10	1.2880E-10	0.00
ET2	1.2880E-10	1.2880E-10	0.00
LN(ET)	1.2880E-10	1.2880E-10	0.00
BBsec	1.4705E-10	1.4700E-10	0.03
BBbas	1.4705E-10	1.4700E-10	0.03
bb	1.4705E-10	1.4700E-10	0.03
AI	1.4705E-10	1.4700E-10	0.03
LN(TH)	1.4705E-10	1.4700E-10	0.03
ESOPHAGUS	1.3533E-10	1.3530E-10	0.02
REMAINDER	**2.4400E-10**	**2.4410E-10**	**-0.04**
C.E.D.	**7.4003E-10**	**7.3990E-10**	**0.02**
Maximum			**-0.10**

C.10.23.4. Acute Ingestion (f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.4609E-10	1.4610E-10	-0.01
URIN BLADDER	3.9000E-10	3.9000E-10	0.00
BRAIN	5.0980E-11	5.0980E-11	0.00
BREAST	6.0769E-11	6.0760E-11	0.01
GALL BLADDER	3.7597E-10	N/A	N/A
HEART	9.6294E-11	N/A	N/A
KIDNEYS	2.0944E-10	2.0940E-10	0.02
LIVER	2.4532E-10	2.4530E-10	0.01
MUSCLE	1.7590E-10	1.7590E-10	0.00
OVARIES	1.0704E-09	1.0700E-09	0.04
PANCREAS	2.0617E-10	2.0620E-10	-0.01
TESTES	1.5788E-10	1.5790E-10	-0.01
THYROID	6.5599E-11	6.5600E-11	0.00
R.B.M.	2.4915E-10	2.4910E-10	0.02
BONE SURFACE	1.4873E-10	1.4870E-10	0.02
STOMACH	3.8095E-10	3.8090E-10	0.01
S.I.	1.0123E-09	1.0120E-09	0.03
U.L.I.	1.9564E-09	1.9560E-09	0.02
L.L.I.	4.0298E-09	4.0290E-09	0.02
SKIN	8.5511E-11	8.5500E-11	0.01
SPLEEN	1.6179E-10	1.6180E-10	-0.01
THYMUS	7.2627E-11	7.2620E-11	0.01
UTERUS	5.1576E-10	5.1570E-10	0.01
ET	6.5599E-11	6.5600E-11	0.00
LUNG	8.3241E-11	8.3320E-11	-0.09
COLON	2.8530E-09	2.8520E-09	0.04
ET1	6.5599E-11	6.5600E-11	0.00
ET2	6.5599E-11	6.5600E-11	0.00
LN(ET)	6.5599E-11	6.5600E-11	0.00
BBsec	8.3241E-11	8.3240E-11	0.00
BBbas	8.3241E-11	8.3240E-11	0.00
bb	8.3241E-11	8.3240E-11	0.00
AI	8.3241E-11	8.3240E-11	0.00
LN(TH)	8.3241E-11	8.3240E-11	0.00
ESOPHAGUS	7.2627E-11	7.2620E-11	0.01
REMAINDER	**1.8872E-10**	**1.8880E-10**	**-0.04**
C.E.D.	**6.9554E-10**	**6.9540E-10**	**0.02**
Maximum			**-0.09**

C.10.24. ^{60}Co – Cobalt-60

Maximum difference in ***Effective Dose***: **-0.14%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.26%** (Inhalation – type "M" - Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.05%**.

C.10.24.1. Acute Inhalation (Type M: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.3644E-09	4.3650E-09	-0.01
URIN BLADDER	2.2617E-09	2.2620E-09	-0.01
BRAIN	1.6239E-09	1.6240E-09	-0.01
BREAST	3.5376E-09	3.5380E-09	-0.01
GALL BLADDER	3.6657E-09	N/A	N/A
HEART	5.4772E-09	N/A	N/A
KIDNEYS	2.9626E-09	2.9630E-09	-0.01
LIVER	6.0954E-09	6.0960E-09	-0.01
MUSCLE	2.6942E-09	2.6940E-09	0.01
OVARIES	3.1170E-09	3.1170E-09	0.00
PANCREAS	3.8732E-09	3.8730E-09	0.01
TESTES	1.7275E-09	1.7270E-09	0.03
THYROID	2.6571E-09	2.6570E-09	0.00
R.B.M.	3.0345E-09	3.0350E-09	-0.02
BONE SURFACE	2.8209E-09	2.8210E-09	0.00
STOMACH	3.2254E-09	3.2250E-09	0.01
S.I.	3.1958E-09	3.1950E-09	0.03
U.L.I.	4.1775E-09	4.1770E-09	0.01
L.L.I.	6.1459E-09	6.1450E-09	0.01
SKIN	1.7404E-09	1.7400E-09	0.02
SPLEEN	3.4456E-09	3.4460E-09	-0.01
THYMUS	4.3082E-09	4.3080E-09	0.00
UTERUS	2.5981E-09	2.5980E-09	0.00
ET	3.0055E-08	3.0060E-08	-0.02
LUNG	3.3494E-08	3.3580E-08	-0.26
COLON	5.0287E-09	5.0270E-09	0.03
ET1	1.3297E-06	1.3300E-06	-0.02
ET2	2.8759E-08	2.8760E-08	0.00
LN(ET)	2.3031E-08	2.3030E-08	0.00
BBsec	6.5847E-08	6.5970E-08	-0.19
BBbas	4.9874E-08	4.9960E-08	-0.17
bb	2.3856E-08	2.3840E-08	0.07
AI	1.8830E-08	1.8830E-08	0.00
LN(TH)	1.2689E-08	1.2690E-08	-0.01
ESOPHAGUS	4.3082E-09	4.3080E-09	0.00
REMAINDER	**2.6818E-09**	**2.6810E-09**	**0.03**
C.E.D.	**7.1200E-09**	**7.1300E-09**	**-0.14**
Maximum			**-0.26**

C.10.24.2. Acute Inhalation (Type S: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.0946E-08	1.0950E-08	-0.04
URIN BLADDER	1.1331E-09	1.1330E-09	0.01
BRAIN	1.4084E-09	1.4080E-09	0.03
BREAST	1.1818E-08	1.1820E-08	-0.02
GALL BLADDER	4.7654E-09	N/A	N/A
HEART	1.9256E-08	N/A	N/A
KIDNEYS	4.5579E-09	4.5580E-09	0.00
LIVER	1.0191E-08	1.0190E-08	0.01
MUSCLE	5.1574E-09	5.1580E-09	-0.01
OVARIES	2.2546E-09	2.2550E-09	-0.02
PANCREAS	8.1456E-09	8.1460E-09	0.00
TESTES	6.6231E-10	6.6230E-10	0.00
THYROID	5.1100E-09	5.1100E-09	0.00
R.B.M.	6.3291E-09	6.3300E-09	-0.01
BONE SURFACE	4.8899E-09	4.8900E-09	0.00
STOMACH	6.4881E-09	6.4890E-09	-0.01
S.I.	2.8140E-09	2.8140E-09	0.00
U.L.I.	4.0630E-09	4.0630E-09	0.00
L.L.I.	5.7022E-09	5.7020E-09	0.00
SKIN	2.9324E-09	2.9330E-09	-0.02

SPLEEN	8.2975E-09	8.2980E-09	-0.01
THYMUS	1.3702E-08	1.3700E-08	0.01
UTERUS	1.5480E-09	1.5480E-09	0.00
ET	7.5603E-08	7.5610E-08	-0.01
LUNG	9.6057E-08	9.6210E-08	-0.16
COLON	4.7718E-09	4.7710E-09	0.02
ET1	1.3533E-06	1.3530E-06	0.02
ET2	7.4326E-08	7.4340E-08	-0.02
LN(ET)	7.2663E-08	7.2670E-08	-0.01
BBsec	1.2293E-07	1.2310E-07	-0.14
BBbas	1.0233E-07	1.0240E-07	-0.07
bb	8.4585E-08	8.4570E-08	0.02
AI	9.0982E-08	9.0990E-08	-0.01
LN(TH)	8.8213E-08	8.8220E-08	-0.01
ESOPHAGUS	1.3702E-08	1.3700E-08	0.01
REMAINDER	**4.9932E-09**	**4.9880E-09**	**0.10**
C.E.D.	**1.6514E-08**	**1.6530E-08**	**-0.10**
Maximum			**-0.16**

C.10.24.3. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.4553E-09	2.4550E-09	0.01
URIN BLADDER	2.5809E-09	2.5810E-09	0.00
BRAIN	1.3543E-09	1.3540E-09	0.02
BREAST	1.3437E-09	1.3430E-09	0.05
GALL BLADDER	3.2761E-09	N/A	N/A
HEART	1.9098E-09	N/A	N/A
KIDNEYS	2.3727E-09	2.3730E-09	-0.01
LIVER	4.4450E-09	4.4450E-09	0.00
MUSCLE	1.9130E-09	1.9130E-09	0.00
OVARIES	4.2690E-09	4.2680E-09	0.02
PANCREAS	2.5877E-09	2.5870E-09	0.03
TESTES	1.8063E-09	1.8060E-09	0.02
THYROID	1.6994E-09	1.6990E-09	0.02
R.B.M.	2.1400E-09	2.1400E-09	0.00
BONE SURFACE	2.0435E-09	2.0430E-09	0.02
STOMACH	2.5499E-09	2.5500E-09	0.00
S.I.	4.1765E-09	4.1760E-09	0.01
U.L.I.	6.4970E-09	6.4960E-09	0.02
L.L.I.	1.1567E-08	1.1570E-08	-0.03
SKIN	1.2771E-09	1.2770E-09	0.01
SPLEEN	2.0764E-09	2.0760E-09	0.02
THYMUS	1.7202E-09	1.7200E-09	0.01
UTERUS	3.0302E-09	3.0300E-09	0.01
ET	1.6994E-09	1.6990E-09	0.02
LUNG	1.7733E-09	1.7750E-09	-0.10
COLON	8.6894E-09	8.6860E-09	0.04
ET1	1.6994E-09	1.6990E-09	0.02
ET2	1.6994E-09	1.6990E-09	0.02
LN(ET)	1.6994E-09	1.6990E-09	0.02
BBsec	1.7733E-09	1.7730E-09	0.02
BBbas	1.7733E-09	1.7730E-09	0.02
bb	1.7733E-09	1.7730E-09	0.02
AI	1.7733E-09	1.7730E-09	0.02
LN(TH)	1.7733E-09	1.7730E-09	0.02
ESOPHAGUS	1.7202E-09	1.7200E-09	0.01
REMAINDER	**1.9454E-09**	**1.9450E-09**	**0.02**
C.E.D.	**3.3920E-09**	**3.3920E-09**	**0.00**
Maximum			**-0.10**

C.10.24.4. Acute Ingestion (f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.3057E-09	1.3060E-09	-0.02
URIN BLADDER	1.6759E-09	1.6760E-09	-0.01
BRAIN	6.7798E-10	6.7790E-10	0.01
BREAST	6.9088E-10	6.9070E-10	0.03
GALL BLADDER	1.9879E-09	N/A	N/A
HEART	9.9324E-10	N/A	N/A
KIDNEYS	1.3559E-09	1.3560E-09	-0.01
LIVER	2.3390E-09	2.3390E-09	0.00
MUSCLE	1.1043E-09	1.1040E-09	0.03
OVARIES	3.3777E-09	3.3770E-09	0.02
PANCREAS	1.4443E-09	1.4440E-09	0.02
TESTES	1.0255E-09	1.0250E-09	0.05
THYROID	8.5367E-10	8.5360E-10	0.01
R.B.M.	1.2963E-09	1.2960E-09	0.02
BONE SURFACE	1.1206E-09	1.1210E-09	-0.04
STOMACH	1.6681E-09	1.6680E-09	0.01
S.I.	3.2777E-09	3.2770E-09	0.02
U.L.I.	5.7377E-09	5.7370E-09	0.01
L.L.I.	1.1084E-08	1.1080E-08	0.04
SKIN	6.9778E-10	6.9760E-10	0.03
SPLEEN	1.1573E-09	1.1570E-09	0.03
THYMUS	8.7432E-10	8.7420E-10	0.01
UTERUS	2.0537E-09	2.0540E-09	-0.01
ET	8.5367E-10	8.5360E-10	0.01
LUNG	9.1305E-10	9.1390E-10	-0.09
COLON	8.0498E-09	8.0470E-09	0.03
ET1	8.5367E-10	8.5360E-10	0.01
ET2	8.5367E-10	8.5360E-10	0.01
LN(ET)	8.5367E-10	8.5360E-10	0.01
BBsec	9.1305E-10	9.1290E-10	0.02
BBbas	9.1305E-10	9.1290E-10	0.02
bb	9.1305E-10	9.1290E-10	0.02
AI	9.1305E-10	9.1290E-10	0.02
LN(TH)	9.1305E-10	9.1290E-10	0.02
ESOPHAGUS	8.7432E-10	8.7420E-10	0.01
REMAINDER	**1.1364E-09**	**1.1360E-09**	**0.04**
C.E.D.	**2.5035E-09**	**2.5030E-09**	**0.02**
Maximum			**-0.09**

C.10.25. ^{51}Cr – Chromium-51

Maximum difference in ***Effective Dose***: **+0.03%** (Inhalation – type "F"/Ingestion – f_1 = 0.01).
Maximum difference in ***Organ Dose***: **-0.09%** (Inhalation – types "M"/"S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.06%**.

C.10.25.1. Acute Inhalation (Type F: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.5015E-11	1.5010E-11	0.03
URIN BLADDER	1.9682E-11	1.9680E-11	0.01
BRAIN	1.2052E-11	1.2050E-11	0.02
BREAST	9.6784E-12	9.6750E-12	0.04
GALL BLADDER	1.6502E-11	N/A	N/A
HEART	1.2850E-11	N/A	N/A
KIDNEYS	1.4504E-11	1.4500E-11	0.03
LIVER	1.3964E-11	1.3960E-11	0.03
MUSCLE	1.3601E-11	1.3600E-11	0.01
OVARIES	2.4038E-11	2.4040E-11	-0.01
PANCREAS	1.5663E-11	1.5660E-11	0.02
TESTES	1.2506E-11	1.2500E-11	0.05
THYROID	1.3639E-11	1.3640E-11	-0.01
R.B.M.	1.8143E-11	1.8140E-11	0.02
BONE SURFACE	2.3266E-11	2.3260E-11	0.03
STOMACH	1.5879E-11	1.5880E-11	-0.01
S.I.	2.4799E-11	2.4800E-11	0.00
U.L.I.	4.9666E-11	4.9670E-11	-0.01
L.L.I.	1.0544E-10	1.0540E-10	0.04
SKIN	9.5752E-12	9.5720E-12	0.03
SPLEEN	1.3914E-11	1.3910E-11	0.03
THYMUS	1.3181E-11	1.3180E-11	0.01
UTERUS	1.9002E-11	1.9000E-11	0.01
ET	2.5316E-10	2.5310E-10	0.02
LUNG	1.2701E-11	1.2710E-11	-0.07
COLON	7.3785E-11	7.3760E-11	0.03
ET1	5.9682E-10	5.9680E-10	0.00
ET2	2.5282E-10	2.5280E-10	0.01
LN(ET)	2.5275E-10	2.5270E-10	0.02
BBsec	1.2698E-11	1.2700E-11	-0.02
BBbas	1.2697E-11	1.2690E-11	0.06
bb	1.2687E-11	1.2680E-11	0.06
AI	1.2719E-11	1.2720E-11	-0.01
LN(TH)	1.2685E-11	1.2680E-11	0.04
ESOPHAGUS	1.3181E-11	1.3180E-11	0.01
REMAINDER	**1.3348E-10**	**1.3350E-10**	**-0.01**
C.E.D.	**2.9778E-11**	**2.9770E-11**	**0.03**
Maximum			**-0.07**

C.10.25.2. Acute Inhalation (Type M: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.1805E-11	1.1810E-11	-0.04
URIN BLADDER	8.7266E-12	8.7260E-12	0.01
BRAIN	4.1980E-12	4.1970E-12	0.02
BREAST	1.0126E-11	1.0130E-11	-0.04
GALL BLADDER	9.9586E-12	N/A	N/A
HEART	1.6889E-11	N/A	N/A
KIDNEYS	7.4049E-12	7.4050E-12	0.00
LIVER	1.0551E-11	1.0550E-11	0.01
MUSCLE	8.2751E-12	8.2750E-12	0.00
OVARIES	1.7511E-11	1.7510E-11	0.01
PANCREAS	1.0607E-11	1.0610E-11	-0.03
TESTES	4.3038E-12	4.3030E-12	0.02
THYROID	7.0342E-12	7.0340E-12	0.00
R.B.M.	1.0848E-11	1.0850E-11	-0.02
BONE SURFACE	1.0704E-11	1.0700E-11	0.04
STOMACH	1.2828E-11	1.2830E-11	-0.02
S.I.	2.1280E-11	2.1280E-11	0.00
U.L.I.	5.5154E-11	5.5160E-11	-0.01
L.L.I.	1.3061E-10	1.3060E-10	0.01
SKIN	4.5388E-12	4.5380E-12	0.02
SPLEEN	9.6119E-12	9.6120E-12	0.00
THYMUS	1.3023E-11	1.3020E-11	0.02
UTERUS	1.0169E-11	1.0170E-11	-0.01
ET	2.5269E-10	2.5270E-10	0.00
LUNG	6.9765E-11	6.9830E-11	-0.09
COLON	8.7786E-11	8.7760E-11	0.03
ET1	5.9601E-10	5.9600E-10	0.00
ET2	2.5235E-10	2.5230E-10	0.02
LN(ET)	2.5282E-10	2.5280E-10	0.01
BBsec	4.5640E-11	4.5660E-11	-0.04
BBbas	4.4879E-11	4.4900E-11	-0.05
bb	3.9676E-11	3.9680E-11	-0.01
AI	1.2444E-10	1.2450E-10	-0.05
LN(TH)	4.1992E-11	4.2000E-11	-0.02
ESOPHAGUS	1.3023E-11	1.3020E-11	0.02
REMAINDER	**1.3053E-10**	**1.3050E-10**	**0.02**
C.E.D.	**3.4402E-11**	**3.4410E-11**	**-0.02**
Maximum			**-0.09**

C.10.25.3. Acute Inhalation (Type S: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.2372E-11	1.2370E-11	0.02
URIN BLADDER	7.0693E-12	7.0690E-12	0.00
BRAIN	3.1014E-12	3.1010E-12	0.01
BREAST	1.1253E-11	1.1250E-11	0.03
GALL BLADDER	9.2827E-12	N/A	N/A
HEART	1.9368E-11	N/A	N/A
KIDNEYS	6.6487E-12	6.6490E-12	0.00
LIVER	1.0896E-11	1.0900E-11	-0.04
MUSCLE	7.8955E-12	7.8960E-12	-0.01
OVARIES	1.6401E-11	1.6400E-11	0.01
PANCREAS	1.0594E-11	1.0590E-11	0.04
TESTES	3.0859E-12	3.0860E-12	0.00
THYROID	6.4695E-12	6.4700E-12	-0.01
R.B.M.	1.0280E-11	1.0280E-11	0.00
BONE SURFACE	9.3017E-12	9.3020E-12	0.00
STOMACH	1.2802E-11	1.2800E-11	0.02
S.I.	2.0591E-11	2.0590E-11	0.00
U.L.I.	5.5330E-11	5.5330E-11	0.00
L.L.I.	1.3253E-10	1.3250E-10	0.02
SKIN	3.9980E-12	3.9980E-12	0.00
SPLEEN	9.6771E-12	9.6780E-12	-0.01
THYMUS	1.4269E-11	1.4270E-11	-0.01
UTERUS	8.8160E-12	8.8160E-12	0.00
ET	2.5380E-10	2.5380E-10	0.00
LUNG	8.7718E-11	8.7800E-11	-0.09
COLON	8.8712E-11	8.8680E-11	0.04
ET1	5.9702E-10	5.9700E-10	0.00
ET2	2.5346E-10	2.5340E-10	0.02
LN(ET)	2.5434E-10	2.5430E-10	0.02
BBsec	5.5893E-11	5.5920E-11	-0.05
BBbas	5.4975E-11	5.5000E-11	-0.05
bb	4.8755E-11	4.8760E-11	-0.01
AI	1.5907E-10	1.5910E-10	-0.02
LN(TH)	5.2624E-11	5.2640E-11	-0.03
ESOPHAGUS	1.4269E-11	1.4270E-11	-0.01
REMAINDER	**1.3088E-10**	**1.3090E-10**	**-0.02**
C.E.D.	**3.6396E-11**	**3.6400E-11**	**-0.01**
Maximum			**-0.09**

C.10.25.4. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.6709E-12	6.6700E-12	0.01
URIN BLADDER	1.6059E-11	1.6060E-11	-0.01
BRAIN	3.6585E-12	3.6570E-12	0.04
BREAST	3.4082E-12	3.4070E-12	0.04
GALL BLADDER	1.4284E-11	N/A	N/A
HEART	4.8555E-12	N/A	N/A
KIDNEYS	8.7896E-12	8.7890E-12	0.01
LIVER	7.1190E-12	7.1180E-12	0.01
MUSCLE	7.6098E-12	7.6090E-12	0.01
OVARIES	3.7143E-11	3.7140E-11	0.01
PANCREAS	8.7154E-12	8.7140E-12	0.02
TESTES	7.0204E-12	7.0190E-12	0.02
THYROID	4.2175E-12	4.2160E-12	0.04
R.B.M.	1.1300E-11	1.1300E-11	0.00
BONE SURFACE	1.0122E-11	1.0120E-11	0.02
STOMACH	1.8904E-11	1.8900E-11	0.02
S.I.	4.6103E-11	4.6100E-11	0.01
U.L.I.	1.2633E-10	1.2630E-10	0.02
L.L.I.	3.0712E-10	3.0710E-10	0.01
SKIN	4.1800E-12	4.1790E-12	0.02
SPLEEN	7.3731E-12	7.3720E-12	0.01
THYMUS	4.2311E-12	4.2300E-12	0.03
UTERUS	1.9737E-11	1.9740E-11	-0.02
ET	4.2175E-12	4.2160E-12	0.04
LUNG	4.4571E-12	4.4600E-12	-0.07
COLON	2.0451E-10	2.0440E-10	0.05
ET1	4.2175E-12	4.2160E-12	0.04
ET2	4.2175E-12	4.2160E-12	0.04
LN(ET)	4.2175E-12	4.2160E-12	0.04
BBsec	4.4571E-12	4.4560E-12	0.02
BBbas	4.4571E-12	4.4560E-12	0.02
bb	4.4571E-12	4.4560E-12	0.02
AI	4.4571E-12	4.4560E-12	0.02
LN(TH)	4.4571E-12	4.4560E-12	0.02
ESOPHAGUS	4.2311E-12	4.2300E-12	0.03
REMAINDER	**8.2722E-12**	**8.2740E-12**	**-0.02**
C.E.D.	**3.8438E-11**	**3.8430E-11**	**0.02**
Maximum			**-0.07**

C.10.25.5 Acute Ingestion (f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.4963E-12	2.4960E-12	0.01
URIN BLADDER	1.1827E-11	1.1830E-11	-0.03
BRAIN	3.7067E-13	3.7060E-13	0.02
BREAST	6.4512E-13	6.4500E-13	0.02
GALL BLADDER	1.0865E-11	N/A	N/A
HEART	1.2302E-12	N/A	N/A
KIDNEYS	5.1485E-12	5.1480E-12	0.01
LIVER	3.4075E-12	3.4070E-12	0.01
MUSCLE	4.3657E-12	4.3660E-12	-0.01
OVARIES	3.4958E-11	3.4960E-11	-0.01
PANCREAS	4.5864E-12	4.5860E-12	0.01
TESTES	3.7895E-12	3.7890E-12	0.01
THYROID	4.6342E-13	4.6330E-13	0.03
R.B.M.	6.9955E-12	6.9950E-12	0.01
BONE SURFACE	3.8859E-12	3.8860E-12	0.00
STOMACH	1.5619E-11	1.5620E-11	-0.01
S.I.	4.5166E-11	4.5170E-11	-0.01
U.L.I.	1.3026E-10	1.3030E-10	-0.03
L.L.I.	3.2211E-10	3.2210E-10	0.00
SKIN	1.6194E-12	1.6190E-12	0.02
SPLEEN	3.6702E-12	3.6700E-12	0.01
THYMUS	6.5119E-13	6.5110E-13	0.01
UTERUS	1.6370E-11	1.6370E-11	0.00
ET	4.6342E-13	4.6330E-13	0.03
LUNG	9.3621E-13	9.3700E-13	-0.08
COLON	2.1322E-10	2.1310E-10	0.06
ET1	4.6342E-13	4.6330E-13	0.03
ET2	4.6342E-13	4.6330E-13	0.03
LN(ET)	4.6342E-13	4.6330E-13	0.03
BBsec	9.3621E-13	9.3610E-13	0.01
BBbas	9.3621E-13	9.3610E-13	0.01
bb	9.3621E-13	9.3610E-13	0.01
AI	9.3621E-13	9.3610E-13	0.01
LN(TH)	9.3621E-13	9.3610E-13	0.01
ESOPHAGUS	6.5119E-13	6.5110E-13	0.01
REMAINDER	**5.0634E-12**	**5.0660E-12**	**-0.05**
C.E.D.	**3.6562E-11**	**3.6550E-11**	**0.03**
Maximum			**-0.08**

C.10.26. ^{134}Cs – Cesium-134

Maximum difference in ***Effective Dose***: **-0.04%** (Ingestion).
Maximum difference in ***Organ Dose***: **-0.12%** (Ingestion – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.05%**.

C.10.26.1 Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.0016E-08	1.0020E-08	-0.04
URIN BLADDER	9.7050E-09	9.7060E-09	-0.01
BRAIN	7.4487E-09	7.4490E-09	0.00
BREAST	6.8195E-09	6.8200E-09	-0.01
GALL BLADDER	9.8240E-09	N/A	N/A
HEART	9.8042E-09	N/A	N/A
KIDNEYS	9.3940E-09	9.3950E-09	-0.01
LIVER	9.4889E-09	9.4900E-09	-0.01
MUSCLE	8.3643E-09	8.3650E-09	-0.01
OVARIES	1.0319E-08	1.0320E-08	-0.01
PANCREAS	1.0421E-08	1.0420E-08	0.01
TESTES	8.3547E-09	8.3550E-09	0.00
THYROID	8.9511E-09	8.9520E-09	-0.01
R.B.M.	8.9514E-09	8.9520E-09	-0.01
BONE SURFACE	9.5863E-09	9.5870E-09	-0.01
STOMACH	8.9641E-09	8.9650E-09	-0.01
S.I.	9.9971E-09	9.9980E-09	-0.01
U.L.I.	9.6861E-09	9.6870E-09	-0.01

L.L.I.	1.0775E-08	1.0780E-08	-0.05
SKIN	6.2553E-09	6.2560E-09	-0.01
SPLEEN	9.3893E-09	9.3900E-09	-0.01
THYMUS	9.0048E-09	9.0060E-09	-0.01
UTERUS	1.0474E-08	1.0480E-08	-0.06
ET	2.2571E-08	2.2570E-08	0.00
LUNG	8.4818E-09	8.4910E-09	-0.11
COLON	1.0157E-08	1.0160E-08	-0.03
ET1	1.3364E-06	1.3360E-06	0.03
ET2	2.1256E-08	2.1260E-08	-0.02
LN(ET)	2.1011E-08	2.1010E-08	0.00
BBsec	8.5160E-09	8.5170E-09	-0.01
BBbas	8.5052E-09	8.5060E-09	-0.01
bb	8.4700E-09	8.4710E-09	-0.01
AI	8.4648E-09	8.4660E-09	-0.01
LN(TH)	8.4637E-09	8.4650E-09	-0.02
ESOPHAGUS	9.0048E-09	9.0060E-09	-0.01
REMAINDER	**1.5479E-08**	**1.5480E-08**	**-0.01**
C.E.D.	**9.5811E-09**	**9.5830E-09**	**-0.02**
Maximum			**-0.11**

C.10.26.2 Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.0695E-08	2.0700E-08	-0.02
URIN BLADDER	2.0057E-08	2.0060E-08	-0.01
BRAIN	1.5290E-08	1.5290E-08	0.00
BREAST	1.4064E-08	1.4070E-08	-0.04
GALL BLADDER	2.0304E-08	N/A	N/A
HEART	2.0229E-08	N/A	N/A
KIDNEYS	1.9412E-08	1.9410E-08	0.01
LIVER	1.9602E-08	1.9600E-08	0.01
MUSCLE	1.7207E-08	1.7210E-08	-0.02
OVARIES	2.1334E-08	2.1340E-08	-0.03
PANCREAS	2.1551E-08	2.1550E-08	0.00
TESTES	1.7265E-08	1.7270E-08	-0.03
THYROID	1.8394E-08	1.8400E-08	-0.03
R.B.M.	1.8444E-08	1.8450E-08	-0.03
BONE SURFACE	1.9741E-08	1.9740E-08	0.01
STOMACH	1.8719E-08	1.8720E-08	-0.01
S.I.	2.0672E-08	2.0670E-08	0.01
U.L.I.	2.0048E-08	2.0050E-08	-0.01
L.L.I.	2.2339E-08	2.2340E-08	0.00
SKIN	1.2890E-08	1.2890E-08	0.00
SPLEEN	1.9410E-08	1.9410E-08	0.00
THYMUS	1.8496E-08	1.8500E-08	-0.02
UTERUS	2.1649E-08	2.1650E-08	0.00
ET	1.8394E-08	1.8400E-08	-0.03
LUNG	1.7429E-08	1.7450E-08	-0.12
COLON	2.1039E-08	2.1040E-08	0.00
ET1	1.8394E-08	1.8400E-08	-0.03
ET2	1.8394E-08	1.8400E-08	-0.03
LN(ET)	1.8394E-08	1.8400E-08	-0.03
BBsec	1.7429E-08	1.7430E-08	-0.01
BBbas	1.7429E-08	1.7430E-08	-0.01
bb	1.7429E-08	1.7430E-08	-0.01
AI	1.7429E-08	1.7430E-08	-0.01
LN(TH)	1.7429E-08	1.7430E-08	-0.01
ESOPHAGUS	1.8496E-08	1.8500E-08	-0.02
REMAINDER	**1.9447E-08**	**1.9450E-08**	**-0.02**
C.E.D.	**1.9172E-08**	**1.9180E-08**	**-0.04**
Maximum			**-0.12**

C.10.27. ^{137}Cs – Cesium-137

Maximum difference in ***Effective Dose***: **-0.04%** (Ingestion).
Maximum difference in ***Organ Dose***: **-0.11%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.04%**.

C.10.27.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.7349E-09	6.7360E-09	-0.02
URIN BLADDER	6.9444E-09	6.9450E-09	-0.01
BRAIN	5.6713E-09	5.6720E-09	-0.01
BREAST	5.3997E-09	5.4000E-09	-0.01
GALL BLADDER	6.6526E-09	N/A	N/A
HEART	6.6474E-09	N/A	N/A
KIDNEYS	6.4737E-09	6.4740E-09	0.00
LIVER	6.5155E-09	6.5160E-09	-0.01
MUSCLE	6.0424E-09	6.0430E-09	-0.01
OVARIES	6.8612E-09	6.8620E-09	-0.01
PANCREAS	6.9038E-09	6.9050E-09	-0.02
TESTES	6.0397E-09	6.0400E-09	0.00
THYROID	6.2911E-09	6.2920E-09	-0.01
R.B.M.	6.2914E-09	6.2920E-09	-0.01
BONE SURFACE	6.5933E-09	6.5940E-09	-0.01
STOMACH	6.3351E-09	6.3360E-09	-0.01
S.I.	6.7249E-09	6.7260E-09	-0.02
U.L.I.	6.9114E-09	6.9120E-09	-0.01
L.L.I.	7.9794E-09	7.9800E-09	-0.01
SKIN	5.1651E-09	5.1660E-09	-0.02
SPLEEN	6.4740E-09	6.4750E-09	-0.02
THYMUS	6.3104E-09	6.3110E-09	-0.01
UTERUS	6.9254E-09	6.9260E-09	-0.01
ET	1.2967E-08	1.2970E-08	-0.02
LUNG	6.1192E-09	6.1260E-09	-0.11
COLON	7.3732E-09	7.3740E-09	-0.01
ET1	1.9135E-06	1.9130E-06	0.03
ET2	1.1065E-08	1.1070E-08	-0.05
LN(ET)	1.0722E-08	1.0720E-08	0.02
BBsec	6.1671E-09	6.1680E-09	-0.01
BBbas	6.1527E-09	6.1540E-09	-0.02
bb	6.1023E-09	6.1030E-09	-0.01
AI	6.0956E-09	6.0960E-09	-0.01
LN(TH)	6.0940E-09	6.0950E-09	-0.02
ESOPHAGUS	6.3104E-09	6.3110E-09	-0.01
REMAINDER	**9.5096E-09**	**9.5100E-09**	**0.00**
C.E.D.	**6.6726E-09**	**6.6740E-09**	**-0.02**
Maximum			**-0.11**

C.10.27.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.3916E-08	1.3920E-08	-0.03
URIN BLADDER	1.4352E-08	1.4350E-08	0.01
BRAIN	1.1683E-08	1.1680E-08	0.03
BREAST	1.1149E-08	1.1150E-08	-0.01
GALL BLADDER	1.3749E-08	N/A	N/A
HEART	1.3726E-08	N/A	N/A
KIDNEYS	1.3378E-08	1.3380E-08	-0.01
LIVER	1.3462E-08	1.3460E-08	0.01
MUSCLE	1.2459E-08	1.2460E-08	-0.01
OVARIES	1.4182E-08	1.4180E-08	0.01
PANCREAS	1.4272E-08	1.4270E-08	0.01
TESTES	1.2481E-08	1.2480E-08	0.01
THYROID	1.2963E-08	1.2960E-08	0.02
R.B.M.	1.2982E-08	1.2980E-08	0.02
BONE SURFACE	1.3600E-08	1.3600E-08	0.00
STOMACH	1.3285E-08	1.3290E-08	-0.04
S.I.	1.3905E-08	1.3910E-08	-0.04
U.L.I.	1.4313E-08	1.4310E-08	0.02
L.L.I.	1.6573E-08	1.6570E-08	0.02
SKIN	1.0661E-08	1.0660E-08	0.01
SPLEEN	1.3381E-08	1.3380E-08	0.01
THYMUS	1.3001E-08	1.3000E-08	0.01
UTERUS	1.4313E-08	1.4310E-08	0.02
ET	1.2963E-08	1.2960E-08	0.02
LUNG	1.2571E-08	1.2580E-08	-0.07
COLON	1.5290E-08	1.5290E-08	0.00
ET1	1.2963E-08	1.2960E-08	0.02
ET2	1.2963E-08	1.2960E-08	0.02
LN(ET)	1.2963E-08	1.2960E-08	0.02
BBsec	1.2571E-08	1.2570E-08	0.01
BBbas	1.2571E-08	1.2570E-08	0.01
bb	1.2571E-08	1.2570E-08	0.01
AI	1.2571E-08	1.2570E-08	0.01
LN(TH)	1.2571E-08	1.2570E-08	0.01
ESOPHAGUS	1.3001E-08	1.3000E-08	0.01
REMAINDER	**1.2480E-08**	**1.2480E-08**	**0.00**
C.E.D.	**1.3445E-08**	**1.3450E-08**	**-0.04**
Maximum			**-0.07**

C.10.28. ^{152}Eu – Europium-152

Maximum difference in ***Effective Dose***: **-0.03%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.21%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.05%**.

C.10.28.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.1067E-08	3.1070E-08	-0.01
URIN BLADDER	4.3813E-09	4.3810E-09	0.01
BRAIN	5.9696E-09	5.9700E-09	-0.01
BREAST	7.8797E-09	7.8800E-09	0.00
GALL BLADDER	4.4202E-08	N/A	N/A
HEART	1.7259E-08	N/A	N/A
KIDNEYS	2.0850E-08	2.0850E-08	0.00
LIVER	1.7872E-07	1.7870E-07	0.01
MUSCLE	8.9607E-09	8.9610E-09	0.00
OVARIES	9.5468E-09	9.5470E-09	0.00
PANCREAS	2.2991E-08	2.2990E-08	0.00
TESTES	2.4348E-09	2.4350E-09	-0.01
THYROID	5.2987E-09	5.2990E-09	-0.01
R.B.M.	4.5799E-08	4.5800E-08	0.00
BONE SURFACE	1.2508E-07	1.2510E-07	-0.02
STOMACH	1.1112E-08	1.1110E-08	0.02
S.I.	1.2346E-08	1.2350E-08	-0.03
U.L.I.	1.6350E-08	1.6350E-08	0.00
L.L.I.	1.2448E-08	1.2450E-08	-0.02
SKIN	5.6570E-09	5.6570E-09	0.00
SPLEEN	8.4117E-09	8.4120E-09	0.00
THYMUS	8.3456E-09	8.3460E-09	0.00
UTERUS	6.8631E-09	6.8630E-09	0.00
ET	2.1421E-08	2.1420E-08	0.00
LUNG	3.9515E-08	3.9600E-08	-0.21
COLON	1.4663E-08	1.4670E-08	-0.05
ET1	1.0944E-06	1.0940E-06	0.04
ET2	2.0351E-08	2.0350E-08	0.00
LN(ET)	1.5808E-08	1.5810E-08	-0.01
BBsec	6.5393E-08	6.5490E-08	-0.15
BBbas	5.1675E-08	5.1740E-08	-0.13
bb	3.1756E-08	3.1740E-08	0.05
AI	2.8310E-08	2.8310E-08	0.00
LN(TH)	2.0823E-08	2.0820E-08	0.01
ESOPHAGUS	8.3456E-09	8.3460E-09	0.00
REMAINDER	**9.0675E-09**	**9.0680E-09**	**-0.01**
C.E.D.	**2.7232E-08**	**2.7240E-08**	**-0.03**
Maximum			**-0.21**

C.10.28.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.1924E-10	3.1920E-10	0.01
URIN BLADDER	4.1614E-10	4.1610E-10	0.01
BRAIN	4.8716E-11	4.8710E-11	0.01
BREAST	7.1725E-11	7.1720E-11	0.01
GALL BLADDER	7.0557E-10	N/A	N/A
HEART	1.6029E-10	N/A	N/A
KIDNEYS	3.2961E-10	3.2960E-10	0.00
LIVER	1.5705E-09	1.5700E-09	0.03
MUSCLE	2.1219E-10	2.1220E-10	0.00
OVARIES	1.3211E-09	1.3210E-09	0.01
PANCREAS	3.2718E-10	3.2720E-10	-0.01
TESTES	1.3739E-10	1.3740E-10	-0.01
THYROID	4.2907E-11	4.2900E-11	0.02
R.B.M.	5.9228E-10	5.9230E-10	0.00
BONE SURFACE	1.1331E-09	1.1330E-09	0.01
STOMACH	5.7693E-10	5.7690E-10	0.01
S.I.	1.5518E-09	1.5520E-09	-0.01
U.L.I.	4.1714E-09	4.1710E-09	0.01
L.L.I.	1.0001E-08	1.0000E-08	0.01
SKIN	9.7773E-11	9.7770E-11	0.00

SPLEEN	1.7596E-10	1.7600E-10	-0.02
THYMUS	6.9804E-11	6.9800E-11	0.01
UTERUS	5.9236E-10	5.9240E-10	-0.01
ET	4.2907E-11	4.2900E-11	0.02
LUNG	1.4018E-10	1.4030E-10	-0.09
COLON	6.6925E-09	6.6900E-09	0.04
ET1	4.2907E-11	4.2900E-11	0.02
ET2	4.2907E-11	4.2900E-11	0.02
LN(ET)	4.2907E-11	4.2900E-11	0.02
BBsec	1.4018E-10	1.4020E-10	-0.01
BBbas	1.4018E-10	1.4020E-10	-0.01
bb	1.4018E-10	1.4020E-10	-0.01
AI	1.4018E-10	1.4020E-10	-0.01
LN(TH)	1.4018E-10	1.4020E-10	-0.01
ESOPHAGUS	6.9804E-11	6.9800E-11	0.01
REMAINDER	**2.3483E-10**	**2.3490E-10**	**-0.03**
C.E.D.	**1.3571E-09**	**1.3570E-09**	**0.01**
Maximum			**-0.09**

C.10.29. ^{154}Eu – Europium-154

Maximum difference in ***Effective Dose***: **-0.08%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.25%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.05%**.

C.10.29.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.7231E-08	2.7230E-08	0.00
URIN BLADDER	3.9270E-09	3.9270E-09	0.00
BRAIN	5.2545E-09	5.2550E-09	-0.01
BREAST	7.1501E-09	7.1510E-09	-0.01
GALL BLADDER	3.8217E-08	N/A	N/A
HEART	1.5399E-08	N/A	N/A
KIDNEYS	1.8703E-08	1.8700E-08	0.02
LIVER	2.1929E-07	2.1930E-07	0.00
MUSCLE	7.9361E-09	7.9370E-09	-0.01
OVARIES	8.4960E-09	8.4970E-09	-0.01
PANCREAS	2.0108E-08	2.0110E-08	-0.01
TESTES	2.1836E-09	2.1840E-09	-0.02
THYROID	4.7657E-09	4.7660E-09	-0.01
R.B.M.	5.9530E-08	5.9540E-08	-0.02
BONE SURFACE	2.6789E-07	2.6790E-07	0.00
STOMACH	9.9658E-09	9.9670E-09	-0.01
S.I.	1.1148E-08	1.1150E-08	-0.02
U.L.I.	1.5781E-08	1.5780E-08	0.01
L.L.I.	1.4911E-08	1.4910E-08	0.01
SKIN	5.0629E-09	5.0640E-09	-0.02
SPLEEN	7.5693E-09	7.5700E-09	-0.01
THYMUS	7.5972E-09	7.5980E-09	-0.01
UTERUS	6.0990E-09	6.1000E-09	-0.02
ET	2.8765E-08	2.8770E-08	-0.02
LUNG	6.4979E-08	6.5140E-08	-0.25
COLON	1.5405E-08	1.5410E-08	-0.03
ET1	2.4094E-06	2.4090E-06	0.02
ET2	2.6392E-08	2.6390E-08	0.01
LN(ET)	1.6556E-08	1.6560E-08	-0.02
BBsec	1.2100E-07	1.2120E-07	-0.17
BBbas	9.3392E-08	9.3540E-08	-0.16
bb	4.7992E-08	4.7960E-08	0.07
AI	3.9879E-08	3.9880E-08	0.00
LN(TH)	2.1136E-08	2.1140E-08	-0.02
ESOPHAGUS	7.5972E-09	7.5980E-09	-0.01
REMAINDER	**8.0408E-09**	**8.0420E-09**	**-0.01**
C.E.D.	**3.4953E-08**	**3.4980E-08**	**-0.08**
Maximum			**-0.25**

C.10.29.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.9453E-10	2.9450E-10	0.01
URIN BLADDER	4.3410E-10	4.3410E-10	0.00
BRAIN	4.3075E-11	4.3080E-11	-0.01
BREAST	6.7178E-11	6.7180E-11	0.00
GALL BLADDER	6.7530E-10	N/A	N/A
HEART	1.4806E-10	N/A	N/A
KIDNEYS	3.2428E-10	3.2430E-10	-0.01
LIVER	1.9223E-09	1.9220E-09	0.02
MUSCLE	2.1292E-10	2.1290E-10	0.01
OVARIES	1.3720E-09	1.3720E-09	0.00
PANCREAS	3.1446E-10	3.1450E-10	-0.01
TESTES	1.4399E-10	1.4400E-10	-0.01
THYROID	3.8836E-11	3.8840E-11	-0.01
R.B.M.	7.2224E-10	7.2220E-10	0.01
BONE SURFACE	2.3198E-09	2.3200E-09	-0.01
STOMACH	7.6231E-10	7.6230E-10	0.00
S.I.	2.0289E-09	2.0290E-09	0.00
U.L.I.	6.9020E-09	6.9020E-09	0.00
L.L.I.	1.7943E-08	1.7940E-08	0.02
SKIN	9.7399E-11	9.7400E-11	0.00
SPLEEN	1.7722E-10	1.7720E-10	0.01
THYMUS	6.4598E-11	6.4600E-11	0.00
UTERUS	6.1838E-10	6.1840E-10	0.00
ET	3.8836E-11	3.8840E-11	-0.01
LUNG	1.2733E-10	1.2750E-10	-0.13
COLON	1.1676E-08	1.1670E-08	0.05
ET1	3.8836E-11	3.8840E-11	-0.01
ET2	3.8836E-11	3.8840E-11	-0.01
LN(ET)	3.8836E-11	3.8840E-11	-0.01
BBsec	1.2733E-10	1.2730E-10	0.02
BBbas	1.2733E-10	1.2730E-10	0.02
bb	1.2733E-10	1.2730E-10	0.02
AI	1.2733E-10	1.2730E-10	0.02
LN(TH)	1.2733E-10	1.2730E-10	0.02
ESOPHAGUS	6.4598E-11	6.4600E-11	0.00
REMAINDER	**2.4513E-10**	**2.4520E-10**	**-0.03**
C.E.D.	**2.0317E-09**	**2.0310E-09**	**0.03**
Maximum			**-0.13**

C.10.30. ^{155}Eu – Europium-155

Maximum difference in ***Effective Dose***: **-0.09%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.25%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.06%**.

C.10.30.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.1979E-09	1.1980E-09	-0.01
URIN BLADDER	1.3668E-10	1.3670E-10	-0.01
BRAIN	1.8742E-10	1.8750E-10	-0.04
BREAST	2.5362E-10	2.5370E-10	-0.03
GALL BLADDER	1.9052E-09	N/A	N/A
HEART	7.0309E-10	N/A	N/A
KIDNEYS	9.2130E-10	9.2150E-10	-0.02
LIVER	2.4317E-08	2.4320E-08	-0.01
MUSCLE	3.1450E-10	3.1460E-10	-0.03
OVARIES	3.4510E-10	3.4520E-10	-0.03
PANCREAS	9.4922E-10	9.4940E-10	-0.02
TESTES	5.7172E-11	5.7180E-11	-0.01
THYROID	1.6566E-10	1.6570E-10	-0.02
R.B.M.	6.8013E-09	6.8030E-09	-0.02
BONE SURFACE	7.6999E-08	7.7010E-08	-0.01
STOMACH	4.3225E-10	4.3230E-10	-0.01
S.I.	5.2261E-10	5.2270E-10	-0.02
U.L.I.	1.0531E-09	1.0530E-09	0.01
L.L.I.	1.7623E-09	1.7620E-09	0.02
SKIN	1.4960E-10	1.4960E-10	0.00
SPLEEN	2.8368E-10	2.8370E-10	-0.01
THYMUS	2.9569E-10	2.9570E-10	0.00
UTERUS	2.3059E-10	2.3060E-10	0.00
ET	6.0625E-09	6.0640E-09	-0.02
LUNG	1.2738E-08	1.2770E-08	-0.25
COLON	1.3598E-09	1.3600E-09	-0.01
ET1	5.1085E-07	5.1080E-07	0.01
ET2	5.5617E-09	5.5630E-09	-0.02
LN(ET)	1.0724E-09	1.0720E-09	0.04
BBsec	3.0309E-08	3.0370E-08	-0.20
BBbas	1.5062E-08	1.5090E-08	-0.19
bb	9.9021E-09	9.8830E-09	0.19
AI	5.6610E-09	5.6620E-09	-0.02
LN(TH)	1.6558E-09	1.6560E-09	-0.01
ESOPHAGUS	2.9569E-10	2.9570E-10	0.00
REMAINDER	**3.2402E-10**	**3.2410E-10**	**-0.02**
C.E.D.	**4.6749E-09**	**4.6790E-09**	**-0.09**
Maximum			**-0.25**

C.10.30.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.3228E-11	1.3230E-11	-0.02
URIN BLADDER	2.9802E-11	2.9800E-11	0.01
BRAIN	1.5409E-12	1.5410E-12	-0.01
BREAST	1.8902E-12	1.8900E-12	0.01
GALL BLADDER	4.1892E-11	N/A	N/A
HEART	6.0341E-12	N/A	N/A
KIDNEYS	1.7076E-11	1.7080E-11	-0.02
LIVER	2.0924E-10	2.0930E-10	-0.03
MUSCLE	1.1629E-11	1.1630E-11	-0.01
OVARIES	9.5452E-11	9.5450E-11	0.00
PANCREAS	1.6858E-11	1.6860E-11	-0.01
TESTES	6.8809E-12	6.8810E-12	0.00
THYROID	1.1987E-12	1.1990E-12	-0.03
R.B.M.	7.0301E-11	7.0310E-11	-0.01
BONE SURFACE	6.6019E-10	6.6030E-10	-0.02
STOMACH	9.9026E-11	9.9030E-11	0.00
S.I.	2.6741E-10	2.6740E-10	0.00
U.L.I.	1.2296E-09	1.2300E-09	-0.03
L.L.I.	3.4599E-09	3.4600E-09	0.00
SKIN	3.5461E-12	3.5460E-12	0.00
SPLEEN	9.1550E-12	9.1550E-12	0.00
THYMUS	1.9586E-12	1.9590E-12	-0.02
UTERUS	4.2794E-11	4.2790E-11	0.01
ET	1.1987E-12	1.1990E-12	-0.03
LUNG	5.4682E-12	5.4740E-12	-0.11
COLON	2.1940E-09	2.1930E-09	0.05
ET1	1.1987E-12	1.1990E-12	-0.03
ET2	1.1987E-12	1.1990E-12	-0.03
LN(ET)	1.1987E-12	1.1990E-12	-0.03
BBsec	5.4682E-12	5.4680E-12	0.00
BBbas	5.4682E-12	5.4680E-12	0.00
bb	5.4682E-12	5.4680E-12	0.00
AI	5.4682E-12	5.4680E-12	0.00
LN(TH)	5.4682E-12	5.4680E-12	0.00
ESOPHAGUS	1.9586E-12	1.9590E-12	-0.02
REMAINDER	**1.6620E-11**	**1.6630E-11**	**-0.06**
C.E.D.	**3.2302E-10**	**3.2290E-10**	**0.04**
Maximum			**-0.11**

C.10.31. ^{156}Eu – Europium-156

Maximum difference in ***Effective Dose***: **-0.20%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.32%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.05%**.

C.10.31.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.3470E-10	3.3470E-10	0.00
URIN BLADDER	1.8614E-10	1.8620E-10	-0.03
BRAIN	8.0144E-11	8.0150E-11	-0.01
BREAST	2.2850E-10	2.2850E-10	0.00
GALL BLADDER	3.9292E-10	N/A	N/A
HEART	3.8837E-10	N/A	N/A
KIDNEYS	6.0588E-10	6.0590E-10	0.00
LIVER	1.5463E-09	1.5470E-09	-0.05
MUSCLE	1.9745E-10	1.9750E-10	-0.03
OVARIES	5.4402E-10	5.4400E-10	0.00
PANCREAS	2.8235E-10	2.8240E-10	-0.02
TESTES	6.3965E-11	6.3970E-11	-0.01
THYROID	1.3385E-10	1.3390E-10	-0.04
R.B.M.	5.7565E-10	5.7570E-10	-0.01
BONE SURFACE	1.2065E-09	1.2070E-09	-0.04
STOMACH	4.7491E-10	4.7490E-10	0.00
S.I.	9.8363E-10	9.8370E-10	-0.01
U.L.I.	3.6466E-09	3.6470E-09	-0.01
L.L.I.	9.2711E-09	9.2710E-09	0.00
SKIN	1.0342E-10	1.0340E-10	0.02
SPLEEN	2.1480E-10	2.1480E-10	0.00
THYMUS	2.8548E-10	2.8550E-10	-0.01
UTERUS	2.5596E-10	2.5600E-10	-0.02
ET	1.2718E-08	1.2720E-08	-0.02
LUNG	1.5481E-08	1.5530E-08	-0.32
COLON	6.0788E-09	6.0770E-09	0.03
ET1	1.8204E-06	1.8200E-06	0.02
ET2	1.0910E-08	1.0910E-08	0.00
LN(ET)	9.2235E-09	9.2230E-09	0.01
BBsec	3.5804E-08	3.5870E-08	-0.18
BBbas	2.7270E-08	2.7320E-08	-0.18
bb	9.5266E-09	9.5160E-09	0.11
AI	5.4233E-09	5.4240E-09	-0.01
LN(TH)	1.0123E-09	1.0120E-09	0.03
ESOPHAGUS	2.8548E-10	2.8550E-10	-0.01
REMAINDER	**2.1934E-10**	**2.1930E-10**	**0.02**
C.E.D.	**2.9651E-09**	**2.9710E-09**	**-0.20**
Maximum			**-0.32**

C.10.31.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.0654E-11	8.0650E-11	0.00
URIN BLADDER	3.7682E-10	3.7680E-10	0.01
BRAIN	1.3731E-12	1.3730E-12	0.01
BREAST	1.9744E-11	1.9740E-11	0.02
GALL BLADDER	3.5935E-10	N/A	N/A
HEART	3.9871E-11	N/A	N/A
KIDNEYS	1.7733E-10	1.7730E-10	0.02
LIVER	1.3607E-10	1.3610E-10	-0.02
MUSCLE	1.4598E-10	1.4600E-10	-0.01
OVARIES	1.2120E-09	1.2120E-09	0.00
PANCREAS	1.5217E-10	1.5220E-10	-0.02
TESTES	1.2009E-10	1.2010E-10	-0.01
THYROID	4.5007E-12	4.5010E-12	-0.01
R.B.M.	2.2736E-10	2.2740E-10	-0.02
BONE SURFACE	1.1534E-10	1.1530E-10	0.03
STOMACH	8.2800E-10	8.2800E-10	0.00
S.I.	2.2507E-09	2.2510E-09	-0.01
U.L.I.	8.7675E-09	8.7680E-09	-0.01
L.L.I.	2.2726E-08	2.2730E-08	-0.02
SKIN	5.8594E-11	5.8590E-11	0.01
SPLEEN	1.2068E-10	1.2070E-10	-0.02
THYMUS	1.4995E-11	1.4990E-11	0.03
UTERUS	5.2929E-10	5.2930E-10	0.00
ET	4.5007E-12	4.5010E-12	-0.01
LUNG	2.7559E-11	2.7590E-11	-0.11
COLON	1.4804E-08	1.4800E-08	0.03
ET1	4.5007E-12	4.5010E-12	-0.01
ET2	4.5007E-12	4.5010E-12	-0.01
LN(ET)	4.5007E-12	4.5010E-12	-0.01
BBsec	2.7559E-11	2.7560E-11	0.00
BBbas	2.7559E-11	2.7560E-11	0.00
bb	2.7559E-11	2.7560E-11	0.00
AI	2.7559E-11	2.7560E-11	0.00
LN(TH)	2.7559E-11	2.7560E-11	0.00
ESOPHAGUS	1.4995E-11	1.4990E-11	0.03
REMAINDER	**1.8419E-10**	**1.8430E-10**	**-0.06**
C.E.D.	**2.1874E-09**	**2.1870E-09**	**0.02**
Maximum			**-0.11**

C.10.32. ^{55}Fe – Iron-55

Maximum difference in ***Effective Dose***: **+0.03%** (Inhalation – type "F").
Maximum difference in ***Organ Dose***: **-1.37%** (Inhalation – LLI).
Maximum difference excluding ***Respiratory Tract***: **-1.37%**.

C.10.32.1. Acute Inhalation (Type F: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.5581E-10	2.5570E-10	0.04
URIN BLADDER	2.5595E-10	2.5630E-10	-0.14
BRAIN	2.5581E-10	2.5570E-10	0.04
BREAST	2.5581E-10	2.5570E-10	0.04
GALL BLADDER	2.5581E-10	N/A	N/A
HEART	2.5581E-10	N/A	N/A
KIDNEYS	2.5581E-10	2.5570E-10	0.04
LIVER	2.1360E-09	2.1360E-09	0.00
MUSCLE	2.5581E-10	2.5570E-10	0.04
OVARIES	2.5581E-10	2.5570E-10	0.04
PANCREAS	2.5581E-10	2.5570E-10	0.04
TESTES	2.5581E-10	2.5570E-10	0.04
THYROID	2.5581E-10	2.5570E-10	0.04
R.B.M.	3.3367E-09	3.3340E-09	0.08
BONE SURFACE	1.8273E-09	1.8260E-09	0.07
STOMACH	2.5717E-10	2.5710E-10	0.03
S.I.	2.5909E-10	2.5900E-10	0.03

U.L.I.	2.7779E-10	2.7770E-10	0.03
L.L.I.	3.2024E-10	3.2470E-10	**-1.37**
SKIN	2.5581E-10	2.5570E-10	0.04
SPLEEN	7.5398E-09	7.5360E-09	0.05
THYMUS	2.5581E-10	2.5570E-10	0.04
UTERUS	2.5581E-10	2.5570E-10	0.04
ET	2.5581E-10	2.5570E-10	0.04
LUNG	2.5583E-10	2.5600E-10	-0.07
COLON	2.9614E-10	2.9800E-10	-0.62
ET1	2.5581E-10	2.5570E-10	0.04
ET2	2.5581E-10	2.5570E-10	0.04
LN(ET)	2.5581E-10	2.5570E-10	0.04
BBsec	2.5581E-10	2.5570E-10	0.04
BBbas	2.5581E-10	2.5570E-10	0.04
bb	2.5581E-10	2.5570E-10	0.04
AI	2.5585E-10	2.5580E-10	0.02
LN(TH)	2.5581E-10	2.5570E-10	0.04
ESOPHAGUS	2.5581E-10	2.5570E-10	0.04
REMAINDER	**3.8978E-09**	**3.8960E-09**	**0.05**
C.E.D.	**9.2235E-10**	**9.2210E-10**	**0.03**
Maximum			**-1.37**

C.10.32.2. Acute Inhalation (Type M: $f_1 = 0.1$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.4973E-11	8.4950E-11	0.03
URIN BLADDER	8.5019E-11	8.5140E-11	-0.14
BRAIN	8.4973E-11	8.4950E-11	0.03
BREAST	8.4973E-11	8.4950E-11	0.03
GALL BLADDER	8.4973E-11	N/A	N/A
HEART	8.4973E-11	N/A	N/A
KIDNEYS	8.4973E-11	8.4950E-11	0.03
LIVER	7.0948E-10	7.0960E-10	-0.02
MUSCLE	8.4973E-11	8.4950E-11	0.03
OVARIES	8.4973E-11	8.4950E-11	0.03
PANCREAS	8.4973E-11	8.4950E-11	0.03
TESTES	8.4973E-11	8.4950E-11	0.03
THYROID	8.4973E-11	8.4950E-11	0.03
R.B.M.	1.1084E-09	1.1070E-09	0.13
BONE SURFACE	6.0701E-10	6.0650E-10	0.08
STOMACH	8.7815E-11	8.7800E-11	0.02
S.I.	9.1441E-11	9.1420E-11	0.02
U.L.I.	1.2482E-10	1.2480E-10	0.02
L.L.I.	2.0180E-10	2.0330E-10	-0.74
SKIN	8.4973E-11	8.4950E-11	0.03
SPLEEN	2.5046E-09	2.5030E-09	0.06
THYMUS	8.4973E-11	8.4950E-11	0.03
UTERUS	8.4973E-11	8.4950E-11	0.03
ET	8.4998E-11	8.4980E-11	0.02
LUNG	2.2503E-10	2.2510E-10	-0.03
COLON	1.5811E-10	1.5870E-10	-0.37
ET1	8.4973E-11	8.4950E-11	0.03
ET2	8.4973E-11	8.4950E-11	0.03
LN(ET)	1.1048E-10	1.1050E-10	-0.02
BBsec	8.4973E-11	8.4950E-11	0.03
BBbas	8.4973E-11	8.4950E-11	0.03
bb	8.4973E-11	8.4950E-11	0.03
AI	5.0538E-10	5.0540E-10	0.00
LN(TH)	1.4778E-10	1.4780E-10	-0.01
ESOPHAGUS	8.4973E-11	8.4950E-11	0.03
REMAINDER	**1.2949E-09**	**1.2940E-09**	**0.07**
C.E.D.	**3.3065E-10**	**3.3060E-10**	**0.02**
Maximum			**-0.74**

C.10.32.3. Acute Ingestion ($f_1 = 0.1$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.4951E-11	8.4920E-11	0.04
URIN BLADDER	8.4997E-11	8.5110E-11	-0.13
BRAIN	8.4951E-11	8.4920E-11	0.04
BREAST	8.4951E-11	8.4920E-11	0.04
GALL BLADDER	8.4951E-11	N/A	N/A
HEART	8.4951E-11	N/A	N/A
KIDNEYS	8.4951E-11	8.4920E-11	0.04
LIVER	7.0930E-10	7.0930E-10	0.00
MUSCLE	8.4951E-11	8.4920E-11	0.04
OVARIES	8.4951E-11	8.4920E-11	0.04
PANCREAS	8.4951E-11	8.4920E-11	0.04
TESTES	8.4951E-11	8.4920E-11	0.04
THYROID	8.4951E-11	8.4920E-11	0.04
R.B.M.	1.1081E-09	1.1070E-09	0.10
BONE SURFACE	6.0683E-10	6.0630E-10	0.09
STOMACH	9.1738E-11	9.1710E-11	0.03
S.I.	1.0030E-10	1.0030E-10	0.00
U.L.I.	1.7851E-10	1.7850E-10	0.01
L.L.I.	3.5924E-10	3.6070E-10	-0.40
SKIN	8.4951E-11	8.4920E-11	0.04
SPLEEN	2.5039E-09	2.5020E-09	0.08
THYMUS	8.4951E-11	8.4920E-11	0.04
UTERUS	8.4951E-11	8.4920E-11	0.04
ET	8.4951E-11	8.4920E-11	0.04
LUNG	8.4951E-11	8.5010E-11	-0.07
COLON	2.5666E-10	2.5720E-10	-0.21
ET1	8.4951E-11	8.4920E-11	0.04
ET2	8.4951E-11	8.4920E-11	0.04
LN(ET)	8.4951E-11	8.4920E-11	0.04
BBsec	8.4951E-11	8.4920E-11	0.04
BBbas	8.4951E-11	8.4920E-11	0.04
bb	8.4951E-11	8.4920E-11	0.04
AI	8.4951E-11	8.4920E-11	0.04
LN(TH)	8.4951E-11	8.4920E-11	0.04
ESOPHAGUS	8.4951E-11	8.4920E-11	0.04
REMAINDER	**1.2946E-09**	**1.2940E-09**	**0.05**
C.E.D.	**3.2607E-10**	**3.2600E-10**	**0.02**
Maximum			**-0.40**

C.10.33. ^{59}Fe – Iron-59

Maximum difference in ***Effective Dose***: **-0.20%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.31%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.06%**.

C.10.33.1. Acute Inhalation (Type F: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.9666E-09	2.9660E-09	0.02
URIN BLADDER	1.7664E-09	1.7660E-09	0.02
BRAIN	1.3986E-09	1.3980E-09	0.04
BREAST	1.4500E-09	1.4500E-09	0.00
GALL BLADDER	3.5450E-09	N/A	N/A
HEART	2.2895E-09	N/A	N/A
KIDNEYS	2.5271E-09	2.5270E-09	0.00
LIVER	8.7732E-09	8.7730E-09	0.00
MUSCLE	1.7705E-09	1.7700E-09	0.03
OVARIES	2.2646E-09	2.2640E-09	0.03
PANCREAS	2.8454E-09	2.8450E-09	0.01
TESTES	1.4941E-09	1.4940E-09	0.01
THYROID	1.6671E-09	1.6670E-09	0.01
R.B.M.	4.1526E-09	4.1530E-09	-0.01
BONE SURFACE	3.0141E-09	3.0140E-09	0.00
STOMACH	2.1053E-09	2.1050E-09	0.01
S.I.	2.3844E-09	2.3840E-09	0.02
U.L.I.	2.8273E-09	2.8270E-09	0.01
L.L.I.	3.4838E-09	3.4860E-09	-0.06
SKIN	1.2731E-09	1.2730E-09	0.01
SPLEEN	5.5569E-09	5.5570E-09	0.00
THYMUS	1.8238E-09	1.8240E-09	-0.01
UTERUS	2.0929E-09	2.0930E-09	0.00
ET	1.1841E-08	1.1840E-08	0.01
LUNG	2.0319E-09	2.0340E-09	-0.10
COLON	3.1112E-09	3.1120E-09	-0.03
ET1	1.3949E-06	1.3950E-06	-0.01
ET2	1.0457E-08	1.0460E-08	-0.03
LN(ET)	1.0202E-08	1.0200E-08	0.02
BBsec	2.0710E-09	2.0710E-09	0.00
BBbas	2.0550E-09	2.0550E-09	0.00
bb	2.0197E-09	2.0190E-09	0.03
AI	2.0130E-09	2.0130E-09	0.00
LN(TH)	2.0122E-09	2.0120E-09	0.01
ESOPHAGUS	1.8238E-09	1.8240E-09	-0.01
REMAINDER	**6.8210E-09**	**6.8200E-09**	**0.01**
C.E.D.	**2.9790E-09**	**2.9790E-09**	**0.00**
Maximum			**-0.10**

C.10.33.2. Acute Inhalation (Type M: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.1280E-09	1.1280E-09	0.00
URIN BLADDER	5.9155E-10	5.9150E-10	0.01
BRAIN	4.2346E-10	4.2340E-10	0.01
BREAST	7.4895E-10	7.4890E-10	0.01
GALL BLADDER	1.1591E-09	N/A	N/A
HEART	1.2040E-09	N/A	N/A
KIDNEYS	8.3931E-10	8.3920E-10	0.01
LIVER	2.6323E-09	2.6320E-09	0.01
MUSCLE	6.7093E-10	6.7080E-10	0.02
OVARIES	9.9389E-10	9.9390E-10	0.00
PANCREAS	1.0298E-09	1.0300E-09	-0.02
TESTES	4.3557E-10	4.3550E-10	0.02
THYROID	6.0614E-10	6.0600E-10	0.02
R.B.M.	1.3529E-09	1.3530E-09	-0.01
BONE SURFACE	9.7469E-10	9.7470E-10	0.00
STOMACH	8.8650E-10	8.8640E-10	0.01
S.I.	1.0949E-09	1.0950E-09	-0.01
U.L.I.	1.9398E-09	1.9400E-09	-0.01
L.L.I.	3.6640E-09	3.6650E-09	-0.03
SKIN	4.4081E-10	4.4070E-10	0.02
SPLEEN	1.7444E-09	1.7440E-09	0.02
THYMUS	9.2058E-10	9.2050E-10	0.01
UTERUS	7.3294E-10	7.3290E-10	0.01
ET	1.3077E-08	1.3080E-08	-0.02
LUNG	1.6947E-08	1.7000E-08	-0.31
COLON	2.6854E-09	2.6850E-09	0.01
ET1	1.3941E-06	1.3940E-06	0.01
ET2	1.1697E-08	1.1700E-08	-0.03
LN(ET)	9.4602E-09	9.4590E-09	0.01
BBsec	4.1681E-08	4.1760E-08	-0.19
BBbas	3.1008E-08	3.1070E-08	-0.20
bb	9.5502E-09	9.5360E-09	0.15
AI	4.9914E-09	4.9910E-09	0.01
LN(TH)	2.3102E-09	2.3100E-09	0.01
ESOPHAGUS	9.2058E-10	9.2050E-10	0.01
REMAINDER	**6.8422E-10**	**6.8400E-10**	**0.03**
C.E.D.	**3.1467E-09**	**3.1530E-09**	**-0.20**
Maximum			**-0.31**

C.10.33.3. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.0439E-09	1.0440E-09	-0.01
URIN BLADDER	8.8919E-10	8.8910E-10	0.01
BRAIN	4.5209E-10	4.5200E-10	0.02
BREAST	4.9151E-10	4.9140E-10	0.02
GALL BLADDER	1.4518E-09	N/A	N/A
HEART	7.8472E-10	N/A	N/A
KIDNEYS	9.7147E-10	9.7130E-10	0.02
LIVER	2.9980E-09	2.9980E-09	0.00
MUSCLE	6.9444E-10	6.9430E-10	0.02
OVARIES	1.7372E-09	1.7370E-09	0.01
PANCREAS	1.0643E-09	1.0640E-09	0.03
TESTES	5.9147E-10	5.9130E-10	0.03
THYROID	5.4346E-10	5.4330E-10	0.03
R.B.M.	1.5490E-09	1.5490E-09	0.00
BONE SURFACE	1.0692E-09	1.0690E-09	0.02
STOMACH	1.1026E-09	1.1030E-09	-0.04
S.I.	1.9093E-09	1.9090E-09	0.02
U.L.I.	3.9546E-09	3.9540E-09	0.02
L.L.I.	8.3064E-09	8.3070E-09	-0.01
SKIN	4.6363E-10	4.6350E-10	0.03
SPLEEN	1.9356E-09	1.9350E-09	0.03
THYMUS	6.0135E-10	6.0120E-10	0.02
UTERUS	1.1228E-09	1.1230E-09	-0.02
ET	5.4346E-10	5.4330E-10	0.03
LUNG	6.8010E-10	6.8060E-10	-0.07
COLON	5.8364E-09	5.8350E-09	0.02
ET1	5.4346E-10	5.4330E-10	0.03
ET2	5.4346E-10	5.4330E-10	0.03
LN(ET)	5.4346E-10	5.4330E-10	0.03
BBsec	6.8010E-10	6.8000E-10	0.01
BBbas	6.8010E-10	6.8000E-10	0.01
bb	6.8010E-10	6.8000E-10	0.01
AI	6.8010E-10	6.8000E-10	0.01
LN(TH)	6.8010E-10	6.8000E-10	0.01
ESOPHAGUS	6.0135E-10	6.0120E-10	0.02
REMAINDER	**7.2108E-10**	**7.2100E-10**	**0.01**
C.E.D.	**1.7752E-09**	**1.7750E-09**	**0.01**
Maximum			**-0.07**

C.10.34A. ^{3}H – Hydrogen-3 (Tritium – Organic)

Maximum difference in ***Effective Dose***: **0.00%**.
Maximum difference in ***Organ Dose***: **-0.11%** (Ingestion – f_1 = 0.99 – Lungs).

C.10.34A.1. Acute Injection (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.1189E-11	4.1190E-11	0.00
URIN BLADDER	4.1189E-11	4.1190E-11	0.00
BRAIN	4.1189E-11	4.1190E-11	0.00
BREAST	4.1189E-11	4.1190E-11	0.00
GALL BLADDER	4.1189E-11	N/A	N/A
HEART	4.1189E-11	N/A	N/A
KIDNEYS	4.1189E-11	4.1190E-11	0.00
LIVER	4.1189E-11	4.1190E-11	0.00
MUSCLE	4.1189E-11	4.1190E-11	0.00
OVARIES	4.1189E-11	4.1190E-11	0.00
PANCREAS	4.1189E-11	4.1190E-11	0.00
TESTES	4.1189E-11	4.1190E-11	0.00
THYROID	4.1189E-11	4.1190E-11	0.00
R.B.M.	4.1189E-11	4.1190E-11	0.00
BONE SURFACE	4.1189E-11	4.1190E-11	0.00
STOMACH	4.1189E-11	4.1190E-11	0.00
S.I.	4.1189E-11	4.1190E-11	0.00
U.L.I.	4.1189E-11	4.1190E-11	0.00
L.L.I.	4.1189E-11	4.1190E-11	0.00
SKIN	4.1189E-11	4.1190E-11	0.00
SPLEEN	4.1189E-11	4.1190E-11	0.00
THYMUS	4.1189E-11	4.1190E-11	0.00
UTERUS	4.1189E-11	4.1190E-11	0.00
ET	4.1189E-11	4.1190E-11	0.00
LUNG	4.1189E-11	4.1230E-11	-0.10
COLON	4.1189E-11	4.1190E-11	0.00
ET1	4.1189E-11	4.1190E-11	0.00
ET2	4.1189E-11	4.1190E-11	0.00
LN(ET)	4.1189E-11	4.1190E-11	0.00
BBsec	4.1189E-11	4.1190E-11	0.00
BBbas	4.1189E-11	4.1190E-11	0.00
bb	4.1189E-11	4.1190E-11	0.00
AI	4.1189E-11	4.1190E-11	0.00
LN(TH)	4.1189E-11	4.1190E-11	0.00
ESOPHAGUS	4.1189E-11	4.1190E-11	0.00
REMAINDER	**4.1189E-11**	**4.1190E-11**	**0.00**
C.E.D.	**4.1189E-11**	**4.1190E-11**	**0.00**
Maximum			**-0.10**

C.10.34A.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.0776E-11	4.0770E-11	0.01
URIN BLADDER	4.0776E-11	4.0770E-11	0.01
BRAIN	4.0776E-11	4.0770E-11	0.01
BREAST	4.0776E-11	4.0770E-11	0.01
GALL BLADDER	4.0776E-11	N/A	N/A
HEART	4.0776E-11	N/A	N/A
KIDNEYS	4.0776E-11	4.0770E-11	0.01
LIVER	4.0776E-11	4.0770E-11	0.01
MUSCLE	4.0776E-11	4.0770E-11	0.01
OVARIES	4.0776E-11	4.0770E-11	0.01
PANCREAS	4.0776E-11	4.0770E-11	0.01
TESTES	4.0776E-11	4.0770E-11	0.01
THYROID	4.0776E-11	4.0770E-11	0.01
R.B.M.	4.0776E-11	4.0770E-11	0.01
BONE SURFACE	4.0776E-11	4.0770E-11	0.01
STOMACH	4.7323E-11	4.7320E-11	0.01
S.I.	4.0940E-11	4.0940E-11	0.00
U.L.I.	4.1767E-11	4.1770E-11	-0.01
L.L.I.	4.3682E-11	4.3680E-11	0.00
SKIN	4.0776E-11	4.0770E-11	0.01
SPLEEN	4.0776E-11	4.0770E-11	0.01
THYMUS	4.0776E-11	4.0770E-11	0.01
UTERUS	4.0776E-11	4.0770E-11	0.01
ET	4.0776E-11	4.0770E-11	0.01
LUNG	4.0776E-11	4.0820E-11	-0.11
COLON	4.2595E-11	4.2590E-11	0.01
ET1	4.0776E-11	4.0770E-11	0.01
ET2	4.0776E-11	4.0770E-11	0.01
LN(ET)	4.0776E-11	4.0770E-11	0.01
BBsec	4.0776E-11	4.0770E-11	0.01
BBbas	4.0776E-11	4.0770E-11	0.01
bb	4.0776E-11	4.0770E-11	0.01
AI	4.0776E-11	4.0770E-11	0.01
LN(TH)	4.0776E-11	4.0770E-11	0.01
ESOPHAGUS	4.0776E-11	4.0770E-11	0.01
REMAINDER	**4.0779E-11**	**4.0780E-11**	**0.00**
C.E.D.	**4.1780E-11**	**4.1780E-11**	**0.00**
Maximum			**-0.11**

Note: ICRP tabulated dose coefficients (and **PLEIADES**) treat inhalation of unspecified compounds of hydrogen (in vapor form) as if it were injection.

C.10.34B. ^{3}H – Hydrogen-3 (Tritiated Water – Inorganic)

Maximum difference in ***Effective Dose***: **+0.01%**.
Maximum difference in ***Organ Dose***: **-0.10%** (Inhalation/Ingestion – Lungs).

C.10.34B.1. Acute Injection (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.8272E-11	1.8270E-11	0.01
URIN BLADDER	1.8272E-11	1.8270E-11	0.01
BRAIN	1.8272E-11	1.8270E-11	0.01
BREAST	1.8272E-11	1.8270E-11	0.01
GALL BLADDER	1.8272E-11	N/A	N/A
HEART	1.8272E-11	N/A	N/A
KIDNEYS	1.8272E-11	1.8270E-11	0.01
LIVER	1.8272E-11	1.8270E-11	0.01
MUSCLE	1.8272E-11	1.8270E-11	0.01
OVARIES	1.8272E-11	1.8270E-11	0.01
PANCREAS	1.8272E-11	1.8270E-11	0.01
TESTES	1.8272E-11	1.8270E-11	0.01
THYROID	1.8272E-11	1.8270E-11	0.01
R.B.M.	1.8272E-11	1.8270E-11	0.01
BONE SURFACE	1.8272E-11	1.8270E-11	0.01
STOMACH	1.8272E-11	1.8270E-11	0.01
S.I.	1.8272E-11	1.8270E-11	0.01
U.L.I.	1.8272E-11	1.8270E-11	0.01
L.L.I.	1.8272E-11	1.8270E-11	0.01
SKIN	1.8272E-11	1.8270E-11	0.01
SPLEEN	1.8272E-11	1.8270E-11	0.01
THYMUS	1.8272E-11	1.8270E-11	0.01
UTERUS	1.8272E-11	1.8270E-11	0.01
ET	1.8272E-11	1.8270E-11	0.01
LUNG	1.8272E-11	1.8290E-11	-0.10
COLON	1.8272E-11	1.8270E-11	0.01
ET1	1.8272E-11	1.8270E-11	0.01
ET2	1.8272E-11	1.8270E-11	0.01
LN(ET)	1.8272E-11	1.8270E-11	0.01
BBsec	1.8272E-11	1.8270E-11	0.01
BBbas	1.8272E-11	1.8270E-11	0.01
bb	1.8272E-11	1.8270E-11	0.01
AI	1.8272E-11	1.8270E-11	0.01
LN(TH)	1.8272E-11	1.8270E-11	0.01
ESOPHAGUS	1.8272E-11	1.8270E-11	0.01
REMAINDER	**1.8272E-11**	**1.8270E-11**	**0.01**
C.E.D.	**1.8272E-11**	**1.8270E-11**	**0.01**
Maximum			**-0.10**

C.10.34B.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.8272E-11	1.8270E-11	0.01
URIN BLADDER	1.8272E-11	1.8270E-11	0.01
BRAIN	1.8272E-11	1.8270E-11	0.01
BREAST	1.8272E-11	1.8270E-11	0.01
GALL BLADDER	1.8272E-11	N/A	N/A
HEART	1.8272E-11	N/A	N/A
KIDNEYS	1.8272E-11	1.8270E-11	0.01
LIVER	1.8272E-11	1.8270E-11	0.01
MUSCLE	1.8272E-11	1.8270E-11	0.01
OVARIES	1.8272E-11	1.8270E-11	0.01
PANCREAS	1.8272E-11	1.8270E-11	0.01
TESTES	1.8272E-11	1.8270E-11	0.01
THYROID	1.8272E-11	1.8270E-11	0.01
R.B.M.	1.8272E-11	1.8270E-11	0.01
BONE SURFACE	1.8272E-11	1.8270E-11	0.01
STOMACH	1.8272E-11	1.8270E-11	0.01
S.I.	1.8272E-11	1.8270E-11	0.01
U.L.I.	1.8272E-11	1.8270E-11	0.01
L.L.I.	1.8272E-11	1.8270E-11	0.01
SKIN	1.8272E-11	1.8270E-11	0.01
SPLEEN	1.8272E-11	1.8270E-11	0.01
THYMUS	1.8272E-11	1.8270E-11	0.01
UTERUS	1.8272E-11	1.8270E-11	0.01
ET	1.8272E-11	1.8270E-11	0.01
LUNG	1.8272E-11	1.8290E-11	-0.10
COLON	1.8272E-11	1.8270E-11	0.01
ET1	1.8272E-11	1.8270E-11	0.01
ET2	1.8272E-11	1.8270E-11	0.01
LN(ET)	1.8272E-11	1.8270E-11	0.01
BBsec	1.8272E-11	1.8270E-11	0.01
BBbas	1.8272E-11	1.8270E-11	0.01
bb	1.8272E-11	1.8270E-11	0.01
AI	1.8272E-11	1.8270E-11	0.01
LN(TH)	1.8272E-11	1.8270E-11	0.01
ESOPHAGUS	1.8272E-11	1.8270E-11	0.01
REMAINDER	**1.8272E-11**	**1.8270E-11**	**0.01**
C.E.D.	**1.8272E-11**	**1.8270E-11**	**0.01**
Maximum			**-0.10**

Note: ICRP tabulated dose coefficients (and **PLEIADES**) treat both inhalation and ingestion of tritiated water as if it were injection. The "IMBA" values shown in C.10.26B.2. for "ingestion" were also calculated for "injection".

C.10.35. ^{181}Hf – Hafnium-181

Maximum difference in ***Effective Dose***: **-0.28%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.34%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.06%**.

C.10.35.1. Acute Inhalation (Type F: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.1728E-10	7.1720E-10	0.01
URIN BLADDER	4.4296E-10	4.4290E-10	0.01
BRAIN	4.6638E-10	4.6630E-10	0.02
BREAST	2.5932E-10	2.5920E-10	0.05
GALL BLADDER	4.2591E-10	N/A	N/A
HEART	3.9131E-10	N/A	N/A
KIDNEYS	5.2276E-10	5.2270E-10	0.01
LIVER	3.6128E-10	3.6120E-10	0.02
MUSCLE	4.1419E-10	4.1410E-10	0.02
OVARIES	7.1663E-10	7.1650E-10	0.02
PANCREAS	4.9419E-10	4.9410E-10	0.02
TESTES	2.5346E-10	2.5340E-10	0.02
THYROID	3.8935E-10	3.8930E-10	0.01
R.B.M.	5.2254E-09	5.2250E-09	0.01
BONE SURFACE	4.8421E-08	4.8420E-08	0.00
STOMACH	3.9973E-10	3.9960E-10	0.03
S.I.	7.4833E-10	7.4830E-10	0.00
U.L.I.	1.5516E-09	1.5520E-09	-0.03
L.L.I.	3.5585E-09	3.5580E-09	0.01
SKIN	2.7763E-10	2.7750E-10	0.05
SPLEEN	3.6720E-10	3.6710E-10	0.03
THYMUS	3.5221E-10	3.5210E-10	0.03
UTERUS	5.0639E-10	5.0630E-10	0.02
ET	7.7171E-09	7.7160E-09	0.01
LUNG	4.5982E-10	4.6030E-10	-0.10
COLON	2.4195E-09	2.4190E-09	0.02
ET1	2.5217E-06	2.5210E-06	0.03
ET2	5.2011E-09	5.2010E-09	0.00
LN(ET)	4.7366E-09	4.7360E-09	0.01
BBsec	5.3652E-10	5.3670E-10	-0.03
BBbas	4.9948E-10	4.9950E-10	0.00
bb	4.3756E-10	4.3740E-10	0.04
AI	4.2401E-10	4.2390E-10	0.03
LN(TH)	4.2265E-10	4.2260E-10	0.01
ESOPHAGUS	3.5221E-10	3.5210E-10	0.03
REMAINDER	**4.2850E-10**	**4.2850E-10**	**0.00**
C.E.D.	**1.7625E-09**	**1.7620E-09**	**0.03**
Maximum			**-0.10**

C.10.35.2. Acute Inhalation (Type M: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.8594E-10	2.8590E-10	0.01
URIN BLADDER	1.4117E-10	1.4120E-10	-0.02
BRAIN	8.9830E-11	8.9820E-11	0.01
BREAST	2.1821E-10	2.1820E-10	0.00
GALL BLADDER	1.8698E-10	N/A	N/A
HEART	3.7660E-10	N/A	N/A
KIDNEYS	1.5640E-10	1.5640E-10	0.00
LIVER	2.1397E-10	2.1400E-10	-0.01
MUSCLE	1.6762E-10	1.6760E-10	0.01
OVARIES	3.4848E-10	3.4850E-10	-0.01
PANCREAS	2.2360E-10	2.2360E-10	0.00
TESTES	5.9878E-11	5.9870E-11	0.01
THYROID	1.3697E-10	1.3700E-10	-0.02
R.B.M.	8.7043E-10	8.7040E-10	0.00
BONE SURFACE	6.8696E-09	6.8690E-09	0.01
STOMACH	2.9472E-10	2.9470E-10	0.01
S.I.	5.4940E-10	5.4940E-10	0.00
U.L.I.	1.8737E-09	1.8740E-09	-0.02
L.L.I.	4.8913E-09	4.8920E-09	-0.01
SKIN	8.7161E-11	8.7150E-11	0.01
SPLEEN	1.9213E-10	1.9210E-10	0.02
THYMUS	2.7692E-10	2.7690E-10	0.01
UTERUS	1.8539E-10	1.8540E-10	-0.01
ET	1.1338E-08	1.1340E-08	-0.02
LUNG	2.8263E-08	2.8360E-08	-0.34
COLON	3.1786E-09	3.1770E-09	0.05
ET1	2.5216E-06	2.5210E-06	0.02
ET2	8.8291E-09	8.8290E-09	0.00
LN(ET)	4.6909E-09	4.6900E-09	0.02
BBsec	7.6362E-08	7.6520E-08	-0.21
BBbas	5.2573E-08	5.2680E-08	-0.20
bb	1.4758E-08	1.4730E-08	0.19
AI	5.6453E-09	5.6460E-09	-0.01
LN(TH)	1.1779E-09	1.1780E-09	-0.01
ESOPHAGUS	2.7692E-10	2.7690E-10	0.01
REMAINDER	**1.7785E-10**	**1.7780E-10**	**0.03**
C.E.D.	**4.1103E-09**	**4.1220E-09**	**-0.28**
Maximum			**-0.34**

C.10.35.3. Acute Ingestion (f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.0839E-11	4.0840E-11	0.00
URIN BLADDER	2.0490E-10	2.0490E-10	0.00
BRAIN	3.2856E-12	3.2850E-12	0.02
BREAST	7.9807E-12	7.9800E-12	0.01
GALL BLADDER	1.8931E-10	N/A	N/A
HEART	1.7282E-11	N/A	N/A
KIDNEYS	8.7006E-11	8.7000E-11	0.01
LIVER	5.6020E-11	5.6020E-11	0.00
MUSCLE	7.4701E-11	7.4700E-11	0.00
OVARIES	6.3842E-10	6.3840E-10	0.00
PANCREAS	7.6987E-11	7.6990E-11	0.00
TESTES	6.3813E-11	6.3810E-11	0.00
THYROID	3.5143E-12	3.5130E-12	0.04
R.B.M.	1.5352E-10	1.5350E-10	0.01
BONE SURFACE	4.0341E-10	4.0340E-10	0.00
STOMACH	4.0687E-10	4.0690E-10	-0.01
S.I.	1.1373E-09	1.1370E-09	0.03
U.L.I.	4.3125E-09	4.3130E-09	-0.01
L.L.I.	1.1534E-08	1.1530E-08	0.03
SKIN	2.5945E-11	2.5940E-11	0.02
SPLEEN	6.0513E-11	6.0510E-11	0.00
THYMUS	6.9400E-12	6.9390E-12	0.01
UTERUS	2.9029E-10	2.9030E-10	0.00
ET	3.5143E-12	3.5130E-12	0.04
LUNG	1.2805E-11	1.2820E-11	-0.12
COLON	7.4354E-09	7.4320E-09	0.05
ET1	3.5143E-12	3.5130E-12	0.04
ET2	3.5143E-12	3.5130E-12	0.04
LN(ET)	3.5143E-12	3.5130E-12	0.04
BBsec	1.2805E-11	1.2800E-11	0.04
BBbas	1.2805E-11	1.2800E-11	0.04
bb	1.2805E-11	1.2800E-11	0.04
AI	1.2805E-11	1.2800E-11	0.04
LN(TH)	1.2805E-11	1.2800E-11	0.04
ESOPHAGUS	6.9400E-12	6.9390E-12	0.01
REMAINDER	**9.4075E-11**	**9.4130E-11**	**-0.06**
C.E.D.	**1.1117E-09**	**1.1110E-09**	**0.06**
Maximum			**-0.12**

C.10.36A. ^{203}Hg – Mercury-203 Inorganic

Maximum difference in ***Effective Dose***: **-0.32%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.36%** (Inhalation – Lung).
Maximum difference excluding ***Respiratory Tract***: **+0.10%**.

C.10.36A.1. Vapor (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.11E-09	1.11E-09	0.06
URIN BLADDER	9.37E-10	9.36E-10	0.06
BRAIN	7.20E-10	7.20E-10	0.08
BREAST	7.27E-10	7.26E-10	0.08
GALL BLADDER	9.84E-10	N/A	N/A
HEART	9.17E-10	N/A	N/A
KIDNEYS	9.56E-09	9.56E-09	-0.01
LIVER	9.53E-10	9.53E-10	0.05
MUSCLE	8.10E-10	8.09E-10	0.07
OVARIES	9.43E-10	9.43E-10	0.05
PANCREAS	1.06E-09	1.06E-09	0.03
TESTES	7.63E-10	7.62E-10	0.07
THYROID	8.24E-10	8.24E-10	0.06
R.B.M.	8.80E-10	8.79E-10	0.06
BONE SURFACE	9.89E-10	9.89E-10	0.05
STOMACH	8.96E-10	8.95E-10	0.06
S.I.	9.54E-10	9.54E-10	0.05
U.L.I.	1.23E-09	1.23E-09	0.06
L.L.I.	1.82E-09	1.82E-09	0.01
SKIN	6.57E-10	6.56E-10	0.09
SPLEEN	1.04E-09	1.04E-09	0.04
THYMUS	8.59E-10	8.59E-10	0.07
UTERUS	9.30E-10	9.30E-10	0.06
ET	8.24E-10	8.24E-10	0.06
LUNG	5.12E-08	5.13E-08	-0.20
COLON	1.49E-09	1.49E-09	0.03
ET1	8.24E-10	8.24E-10	0.06
ET2	8.24E-10	8.24E-10	0.06
LN(ET)	8.24E-10	8.24E-10	0.06
BBsec	1.09E-07	1.09E-07	0.03
BBbas	1.02E-07	1.02E-07	0.02
bb	4.59E-08	4.59E-08	0.01
AI	2.29E-09	2.29E-09	0.01
LN(TH)	1.09E-09	1.09E-09	0.06
ESOPHAGUS	8.59E-10	8.59E-10	0.07
REMAINDER	**8.99E-10**	**8.99E-10**	**0.05**
C.E.D.	**7.00E-09**	**7.01E-09**	**-0.18**
Maximum			**-0.20**

C.10.36A.2. Acute Inhalation (Type F: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.47E-10	4.47E-10	0.04
URIN BLADDER	4.13E-10	4.13E-10	0.04
BRAIN	3.11E-10	3.10E-10	0.08
BREAST	2.83E-10	2.83E-10	0.09
GALL BLADDER	4.24E-10	N/A	N/A
HEART	3.44E-10	N/A	N/A
KIDNEYS	4.04E-09	4.04E-09	-0.02
LIVER	3.86E-10	3.86E-10	0.04
MUSCLE	3.44E-10	3.44E-10	0.07
OVARIES	4.51E-10	4.50E-10	0.05
PANCREAS	4.36E-10	4.36E-10	0.03
TESTES	3.27E-10	3.27E-10	0.07
THYROID	3.46E-10	3.46E-10	0.05
R.B.M.	3.73E-10	3.73E-10	0.06
BONE SURFACE	4.18E-10	4.17E-10	0.05
STOMACH	4.03E-10	4.03E-10	0.04
S.I.	5.04E-10	5.04E-10	0.03
U.L.I.	9.21E-10	9.21E-10	0.02
L.L.I.	1.85E-09	1.85E-09	0.01
SKIN	2.77E-10	2.77E-10	0.07
SPLEEN	4.25E-10	4.25E-10	0.04
THYMUS	3.40E-10	3.40E-10	0.06
UTERUS	4.17E-10	4.17E-10	0.04
ET	3.62E-09	3.62E-09	0.02
LUNG	3.56E-10	3.56E-10	-0.06
COLON	1.32E-09	1.32E-09	0.07
ET1	1.17E-06	1.17E-06	0.03
ET2	2.46E-09	2.46E-09	0.00
LN(ET)	2.25E-09	2.25E-09	0.01
BBsec	3.91E-10	3.91E-10	0.03
BBbas	3.74E-10	3.74E-10	0.02
bb	3.46E-10	3.46E-10	0.05
AI	3.39E-10	3.39E-10	0.05
LN(TH)	3.39E-10	3.39E-10	0.06
ESOPHAGUS	3.40E-10	3.40E-10	0.06
REMAINDER	**2.19E-09**	**2.19E-09**	**0.01**
C.E.D.	**5.90E-10**	**5.90E-10**	**0.02**
Maximum			**0.09**

C.10.36A.3. Acute Inhalation (Type M: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.59E-10	1.59E-10	0.02
URIN BLADDER	1.03E-10	1.03E-10	0.01
BRAIN	6.17E-11	6.17E-11	0.05
BREAST	1.29E-10	1.29E-10	-0.02
GALL BLADDER	1.26E-10	N/A	N/A
HEART	2.05E-10	N/A	N/A
KIDNEYS	7.06E-10	7.06E-10	-0.03
LIVER	1.38E-10	1.39E-10	-0.01
MUSCLE	1.05E-10	1.06E-10	-0.02
OVARIES	1.78E-10	1.78E-10	0.02
PANCREAS	1.41E-10	1.41E-10	-0.02
TESTES	6.41E-11	6.41E-11	0.05
THYROID	9.38E-11	9.38E-11	0.02
R.B.M.	1.24E-10	1.24E-10	0.00
BONE SURFACE	1.23E-10	1.23E-10	0.00
STOMACH	1.76E-10	1.76E-10	0.03
S.I.	2.83E-10	2.83E-10	0.00
U.L.I.	9.17E-10	9.17E-10	-0.01
L.L.I.	2.35E-09	2.35E-09	-0.01

SKIN	6.68E-11	6.68E-11	0.05
SPLEEN	1.34E-10	1.34E-10	-0.01
THYMUS	1.60E-10	1.60E-10	0.01
UTERUS	1.18E-10	1.18E-10	0.05
ET	5.44E-09	5.44E-09	-0.02
LUNG	1.37E-08	1.38E-08	-0.36
COLON	1.54E-09	1.54E-09	0.04
ET1	1.17E-06	1.17E-06	0.02
ET2	4.28E-09	4.28E-09	-0.02
LN(ET)	2.10E-09	2.10E-09	-0.01
BBsec	3.65E-08	3.66E-08	-0.23
BBbas	2.45E-08	2.46E-08	-0.20
bb	7.82E-09	7.80E-09	0.17
AI	2.91E-09	2.91E-09	-0.04
LN(TH)	5.97E-10	5.97E-10	-0.03
ESOPHAGUS	1.60E-10	1.60E-10	0.01
REMAINDER	**1.16E-10**	**1.16E-10**	**0.00**
C.E.D.	**1.94E-09**	**1.95E-09**	**-0.32**
Maximum			**-0.36**

C.10.36A.4. Acute Ingestion (f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.62E-11	4.62E-11	0.04
URIN BLADDER	1.16E-10	1.16E-10	-0.02
BRAIN	2.12E-11	2.12E-11	0.08
BREAST	2.20E-11	2.20E-11	0.10
GALL BLADDER	1.09E-10	N/A	N/A
HEART	2.99E-11	N/A	N/A
KIDNEYS	3.18E-10	3.18E-10	-0.02
LIVER	4.91E-11	4.91E-11	0.02
MUSCLE	5.36E-11	5.36E-11	0.02
OVARIES	2.93E-10	2.93E-10	0.02
PANCREAS	6.14E-11	6.14E-11	0.03
TESTES	4.80E-11	4.80E-11	0.03
THYROID	2.40E-11	2.40E-11	0.07
R.B.M.	7.42E-11	7.42E-11	0.02
BONE SURFACE	5.55E-11	5.55E-11	0.03
STOMACH	2.12E-10	2.12E-10	0.00
S.I.	5.43E-10	5.43E-10	0.00
U.L.I.	2.05E-09	2.05E-09	-0.01
L.L.I.	5.48E-09	5.48E-09	-0.01
SKIN	2.89E-11	2.89E-11	0.04
SPLEEN	5.41E-11	5.41E-11	0.03
THYMUS	2.50E-11	2.50E-11	0.05
UTERUS	1.51E-10	1.51E-10	0.04
ET	2.40E-11	2.40E-11	0.07
LUNG	2.72E-11	2.72E-11	-0.04
COLON	3.53E-09	3.53E-09	0.05
ET1	2.40E-11	2.40E-11	0.07
ET2	2.40E-11	2.40E-11	0.07
LN(ET)	2.40E-11	2.40E-11	0.07
BBsec	2.72E-11	2.72E-11	0.07
BBbas	2.72E-11	2.72E-11	0.07
bb	2.72E-11	2.72E-11	0.07
AI	2.72E-11	2.72E-11	0.07
LN(TH)	2.72E-11	2.72E-11	0.07
ESOPHAGUS	2.50E-11	2.50E-11	0.05
REMAINDER	**6.52E-11**	**6.53E-11**	**-0.02**
C.E.D.	**5.36E-10**	**5.36E-10**	**0.04**
Maximum			**0.10**

C.10.36B. ^{203}Hg – Mercury-203 Organic

Maximum difference in ***Effective Dose***: **+0.05%** (Ingestion – f_1 = 0.4).
Maximum difference in ***Organ Dose***: **+0.11%** (Ingestion – f_1 = 0.99 – Breast).
Maximum difference excluding ***Respiratory Tract***: **+0.11%**.

C.10.36B.1. Acute Inhalation (Type F: f_1 = 0.4)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.27E-10	6.27E-10	0.03
URIN BLADDER	5.21E-10	5.21E-10	0.04
BRAIN	4.39E-09	4.39E-09	-0.03
BREAST	3.83E-10	3.83E-10	0.08
GALL BLADDER	5.71E-10	N/A	N/A
HEART	4.66E-10	N/A	N/A
KIDNEYS	6.74E-09	6.74E-09	-0.03
LIVER	5.27E-10	5.27E-10	0.04
MUSCLE	4.70E-10	4.70E-10	0.04
OVARIES	5.61E-10	5.61E-10	0.04
PANCREAS	6.02E-10	6.02E-10	0.03
TESTES	4.35E-10	4.35E-10	0.06
THYROID	5.29E-10	5.28E-10	0.05
R.B.M.	5.42E-10	5.42E-10	0.03
BONE SURFACE	6.49E-10	6.49E-10	0.02
STOMACH	5.34E-10	5.34E-10	0.05
S.I.	6.04E-10	6.04E-10	0.04
U.L.I.	8.82E-10	8.81E-10	0.03
L.L.I.	1.51E-09	1.51E-09	0.02
SKIN	3.93E-10	3.93E-10	0.07
SPLEEN	5.94E-10	5.94E-10	0.04
THYMUS	4.60E-10	4.60E-10	0.05
UTERUS	5.41E-10	5.41E-10	0.04
ET	3.81E-09	3.81E-09	0.01
LUNG	4.78E-10	4.79E-10	-0.06
COLON	1.15E-09	1.15E-09	0.02
ET1	1.17E-06	1.17E-06	-0.03
ET2	2.64E-09	2.64E-09	0.02
LN(ET)	2.43E-09	2.43E-09	0.03
BBsec	5.14E-10	5.13E-10	0.02
BBbas	4.96E-10	4.96E-10	0.04
bb	4.69E-10	4.68E-10	0.06
AI	4.62E-10	4.61E-10	0.06
LN(TH)	4.61E-10	4.61E-10	0.05
ESOPHAGUS	4.60E-10	4.60E-10	0.05
REMAINDER	**3.70E-09**	**3.70E-09**	**-0.02**
C.E.D.	**7.53E-10**	**7.53E-10**	**0.01**
Maximum			**0.08**

C.10.36B.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.71E-09	1.71E-09	0.05
URIN BLADDER	1.40E-09	1.40E-09	0.05
BRAIN	1.20E-08	1.20E-08	-0.02
BREAST	1.05E-09	1.04E-09	0.11
GALL BLADDER	1.54E-09	N/A	N/A
HEART	1.27E-09	N/A	N/A
KIDNEYS	1.85E-08	1.85E-08	-0.01
LIVER	1.44E-09	1.44E-09	0.06
MUSCLE	1.26E-09	1.26E-09	0.10
OVARIES	1.45E-09	1.45E-09	0.02
PANCREAS	1.64E-09	1.64E-09	0.04
TESTES	1.19E-09	1.19E-09	0.03
THYROID	1.43E-09	1.43E-09	0.08
R.B.M.	1.46E-09	1.46E-09	0.02
BONE SURFACE	1.75E-09	1.75E-09	0.06
STOMACH	1.51E-09	1.51E-09	0.05
S.I.	1.49E-09	1.49E-09	0.07
U.L.I.	1.76E-09	1.76E-09	0.06
L.L.I.	2.36E-09	2.36E-09	0.04
SKIN	1.07E-09	1.07E-09	0.03
SPLEEN	1.62E-09	1.62E-09	0.06
THYMUS	1.24E-09	1.24E-09	0.05
UTERUS	1.44E-09	1.44E-09	0.06
ET	1.43E-09	1.43E-09	0.08
LUNG	1.25E-09	1.25E-09	-0.01
COLON	2.02E-09	2.02E-09	0.02
ET1	1.43E-09	1.43E-09	0.08
ET2	1.43E-09	1.43E-09	0.08
LN(ET)	1.43E-09	1.43E-09	0.08
BBsec	1.25E-09	1.25E-09	0.07
BBbas	1.25E-09	1.25E-09	0.07
bb	1.25E-09	1.25E-09	0.07
AI	1.25E-09	1.25E-09	0.07
LN(TH)	1.25E-09	1.25E-09	0.07
ESOPHAGUS	1.24E-09	1.24E-09	0.05
REMAINDER	**1.01E-08**	**1.01E-08**	**-0.03**
C.E.D.	**1.90E-09**	**1.90E-09**	**0.01**
Maximum			**0.11**

C.10.36B.3. Acute Ingestion (f_1 = 0.4)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.01E-10	7.00E-10	0.04
URIN BLADDER	6.18E-10	6.18E-10	0.05
BRAIN	4.84E-09	4.85E-09	-0.03
BREAST	4.23E-10	4.23E-10	0.08
GALL BLADDER	6.70E-10	N/A	N/A
HEART	5.17E-10	N/A	N/A
KIDNEYS	7.47E-09	7.47E-09	-0.01
LIVER	5.94E-10	5.94E-10	0.04
MUSCLE	5.28E-10	5.28E-10	0.04
OVARIES	7.48E-10	7.47E-10	0.03
PANCREAS	6.82E-10	6.82E-10	0.03
TESTES	4.94E-10	4.93E-10	0.06
THYROID	5.76E-10	5.76E-10	0.05
R.B.M.	6.19E-10	6.18E-10	0.05
BONE SURFACE	7.24E-10	7.24E-10	0.04
STOMACH	7.22E-10	7.21E-10	0.04
S.I.	9.14E-10	9.14E-10	0.03
U.L.I.	1.94E-09	1.94E-09	0.03
L.L.I.	4.26E-09	4.26E-09	0.00
SKIN	4.37E-10	4.36E-10	0.06
SPLEEN	6.70E-10	6.70E-10	0.04
THYMUS	5.01E-10	5.01E-10	0.05
UTERUS	6.58E-10	6.57E-10	0.04
ET	5.76E-10	5.76E-10	0.05
LUNG	5.07E-10	5.07E-10	-0.05
COLON	2.94E-09	2.94E-09	0.03
ET1	5.76E-10	5.76E-10	0.05
ET2	5.76E-10	5.76E-10	0.05
LN(ET)	5.76E-10	5.76E-10	0.05
BBsec	5.07E-10	5.06E-10	0.05
BBbas	5.07E-10	5.06E-10	0.05
bb	5.07E-10	5.06E-10	0.05
AI	5.07E-10	5.06E-10	0.05
LN(TH)	5.07E-10	5.06E-10	0.05
ESOPHAGUS	5.01E-10	5.01E-10	0.05
REMAINDER	**4.10E-09**	**4.11E-09**	**-0.01**
C.E.D.	**1.08E-09**	**1.08E-09**	**0.05**
Maximum			**0.08**

C.10.37. ^{125}I – Iodine-125 (Particulate)

Maximum difference in ***Effective Dose***: **+0.02%** (Inhalation).
Maximum difference in ***Organ Dose***: **+0.11%** (Inhalation – Kidneys).
Maximum difference excluding ***Respiratory Tract***: **+0.11%**.

C.10.37.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.2883E-11	1.2870E-11	0.10
URIN BLADDER	6.9952E-11	6.9950E-11	0.00
BRAIN	1.7459E-11	1.7450E-11	0.05
BREAST	1.0425E-11	1.0420E-11	0.05
GALL BLADDER	1.1563E-11	N/A	N/A
HEART	1.1644E-11	N/A	N/A
KIDNEYS	1.2304E-11	1.2290E-11	0.11
LIVER	1.2656E-11	1.2650E-11	0.05
MUSCLE	6.8039E-11	6.8020E-11	0.03
OVARIES	1.4237E-11	1.4230E-11	0.05
PANCREAS	1.3362E-11	1.3350E-11	0.09
TESTES	1.1206E-11	1.1200E-11	0.05
THYROID	1.4541E-07	1.4540E-07	0.01
R.B.M.	1.6907E-11	1.6900E-11	0.04
BONE SURFACE	8.6905E-11	8.6880E-11	0.03
STOMACH	1.8746E-11	1.8740E-11	0.03
S.I.	1.3175E-11	1.3170E-11	0.04
U.L.I.	1.8099E-11	1.8100E-11	-0.01
L.L.I.	3.0908E-11	3.0900E-11	0.03
SKIN	1.7973E-11	1.7960E-11	0.07

SPLEEN	1.2864E-11	1.2860E-11	0.03
THYMUS	2.5316E-11	2.5300E-11	0.06
UTERUS	1.4525E-11	1.4520E-11	0.03
ET	1.7086E-09	1.7080E-09	0.04
LUNG	2.0860E-11	2.0870E-11	-0.05
COLON	2.3638E-11	2.3630E-11	0.03
ET1	1.7086E-09	1.7080E-09	0.04
ET2	1.7086E-09	1.7080E-09	0.04
LN(ET)	1.7086E-09	1.7080E-09	0.04
BBsec	2.0722E-11	2.0710E-11	0.06
BBbas	2.0681E-11	2.0670E-11	0.05
bb	2.1067E-11	2.1060E-11	0.03
AI	2.0813E-11	2.0800E-11	0.06
LN(TH)	2.0680E-11	2.0670E-11	0.05
ESOPHAGUS	2.5316E-11	2.5300E-11	0.06
REMAINDER	**6.4141E-11**	**6.4150E-11**	**-0.01**
C.E.D.	**7.2931E-09**	**7.2920E-09**	**0.02**
Maximum			**0.11**

C.10.37.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.6685E-11	2.6660E-11	0.09
URIN BLADDER	1.4461E-10	1.4460E-10	0.01
BRAIN	3.5657E-11	3.5630E-11	0.08
BREAST	2.1496E-11	2.1480E-11	0.07
GALL BLADDER	2.4082E-11	N/A	N/A
HEART	2.4083E-11	N/A	N/A
KIDNEYS	2.5518E-11	2.5500E-11	0.07
LIVER	2.6192E-11	2.6170E-11	0.08
MUSCLE	1.3584E-10	1.3580E-10	0.03
OVARIES	3.0133E-11	3.0110E-11	0.08
PANCREAS	2.9098E-11	2.9080E-11	0.06
TESTES	2.3163E-11	2.3140E-11	0.10
THYROID	3.0043E-07	3.0040E-07	0.01
R.B.M.	3.4269E-11	3.4250E-11	0.06
BONE SURFACE	1.7440E-10	1.7430E-10	0.06
STOMACH	6.1535E-11	6.1520E-11	0.02
S.I.	2.8227E-11	2.8210E-11	0.06
U.L.I.	4.0871E-11	4.0860E-11	0.03
L.L.I.	7.2250E-11	7.2220E-11	0.04
SKIN	3.6360E-11	3.6340E-11	0.06
SPLEEN	2.7168E-11	2.7150E-11	0.07
THYMUS	5.1147E-11	5.1120E-11	0.05
UTERUS	3.0122E-11	3.0100E-11	0.07
ET	3.5559E-11	3.5540E-11	0.05
LUNG	4.1897E-11	4.1910E-11	-0.03
COLON	5.4441E-11	5.4410E-11	0.06
ET1	3.5559E-11	3.5540E-11	0.05
ET2	3.5559E-11	3.5540E-11	0.05
LN(ET)	3.5559E-11	3.5540E-11	0.05
BBsec	4.1897E-11	4.1870E-11	0.06
BBbas	4.1897E-11	4.1870E-11	0.06
bb	4.1897E-11	4.1870E-11	0.06
AI	4.1897E-11	4.1870E-11	0.06
LN(TH)	4.1897E-11	4.1870E-11	0.06
ESOPHAGUS	5.1147E-11	5.1120E-11	0.05
REMAINDER	**1.2652E-10**	**1.2650E-10**	**0.02**
C.E.D.	**1.5071E-08**	**1.5070E-08**	**0.01**
Maximum			**0.10**

C.10.38. ^{129}I – Iodine-129 (Particulate)

Maximum difference in ***Effective Dose***: **-0.04%** (Ingestion).
Maximum difference in ***Organ Dose***: **+0.14%** (Ingestion – Kidneys/Testes).
Maximum difference excluding ***Respiratory Tract***: **+0.14%**.

C.10.38.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.9407E-11	5.9350E-11	0.10
URIN BLADDER	2.0718E-10	2.0710E-10	0.04
BRAIN	6.9845E-11	6.9790E-11	0.08
BREAST	5.5078E-11	5.5020E-11	0.11
GALL BLADDER	5.7471E-11	N/A	N/A
HEART	5.7555E-11	N/A	N/A
KIDNEYS	5.8214E-11	5.8150E-11	0.11
LIVER	5.8998E-11	5.8940E-11	0.10
MUSCLE	1.4557E-10	1.4550E-10	0.05
OVARIES	6.1598E-11	6.1540E-11	0.09
PANCREAS	5.9748E-11	5.9690E-11	0.10
TESTES	5.6015E-11	5.5960E-11	0.10
THYROID	1.0180E-06	1.0180E-06	0.00
R.B.M.	6.8568E-11	6.8510E-11	0.08
BONE SURFACE	1.9666E-10	1.9660E-10	0.03
STOMACH	7.2716E-11	7.2660E-11	0.08
S.I.	6.0122E-11	6.0060E-11	0.10
U.L.I.	1.0474E-10	1.0480E-10	-0.06
L.L.I.	1.9727E-10	1.9720E-10	0.04
SKIN	6.8646E-11	6.8590E-11	0.08
SPLEEN	5.9178E-11	5.9120E-11	0.10
THYMUS	8.4298E-11	8.4240E-11	0.07
UTERUS	6.0649E-11	6.0590E-11	0.10
ET	1.4746E-09	1.4740E-09	0.04
LUNG	8.4862E-11	8.4910E-11	-0.06
COLON	1.4475E-10	1.4470E-10	0.03
ET1	5.3887E-07	5.3880E-07	0.01
ET2	9.3676E-10	9.3660E-10	0.02
LN(ET)	8.6474E-10	8.6460E-10	0.02
BBsec	1.0505E-10	1.0510E-10	-0.05
BBbas	8.9342E-11	8.9310E-11	0.04
bb	8.1852E-11	8.1780E-11	0.09
AI	7.5569E-11	7.5510E-11	0.08
LN(TH)	7.5140E-11	7.5080E-11	0.08
ESOPHAGUS	8.4298E-11	8.4240E-11	0.07
REMAINDER	**1.3903E-10**	**1.3900E-10**	**0.02**
C.E.D.	**5.0987E-08**	**5.0990E-08**	**-0.01**
Maximum			**0.11**

C.10.38.2. Acute Ingestion (f1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.2282E-10	1.2270E-10	0.10
URIN BLADDER	4.2820E-10	4.2810E-10	0.02
BRAIN	1.4398E-10	1.4390E-10	0.06
BREAST	1.1378E-10	1.1370E-10	0.07
GALL BLADDER	1.1890E-10	N/A	N/A
HEART	1.1894E-10	N/A	N/A
KIDNEYS	1.2037E-10	1.2020E-10	0.14
LIVER	1.2195E-10	1.2180E-10	0.12
MUSCLE	2.9807E-10	2.9800E-10	0.02
OVARIES	1.2773E-10	1.2760E-10	0.10
PANCREAS	1.2440E-10	1.2430E-10	0.08
TESTES	1.1576E-10	1.1560E-10	0.14
THYROID	2.1036E-06	2.1040E-06	-0.02
R.B.M.	1.4122E-10	1.4110E-10	0.09
BONE SURFACE	4.0287E-10	4.0270E-10	0.04
STOMACH	1.9864E-10	1.9850E-10	0.07
S.I.	1.2573E-10	1.2560E-10	0.10
U.L.I.	2.2380E-10	2.2380E-10	0.00
L.L.I.	4.2822E-10	4.2800E-10	0.05
SKIN	1.4135E-10	1.4120E-10	0.11
SPLEEN	1.2268E-10	1.2260E-10	0.07
THYMUS	1.7335E-10	1.7320E-10	0.09
UTERUS	1.2541E-10	1.2530E-10	0.09
ET	1.4397E-10	1.4380E-10	0.12
LUNG	1.5471E-10	1.5470E-10	0.01
COLON	3.1220E-10	3.1200E-10	0.06
ET1	1.4397E-10	1.4380E-10	0.12
ET2	1.4397E-10	1.4380E-10	0.12
LN(ET)	1.4397E-10	1.4380E-10	0.12
BBsec	1.5471E-10	1.5460E-10	0.07
BBbas	1.5471E-10	1.5460E-10	0.07
bb	1.5471E-10	1.5460E-10	0.07
AI	1.5471E-10	1.5460E-10	0.07
LN(TH)	1.5471E-10	1.5460E-10	0.07
ESOPHAGUS	1.7335E-10	1.7320E-10	0.09
REMAINDER	**2.8340E-10**	**2.8340E-10**	**0.00**
C.E.D.	**1.0536E-07**	**1.0540E-07**	**-0.04**
Maximum			**0.14**

C.10.39. ^{131}I – Iodine-131 (Particulate)

Maximum difference in ***Effective Dose***: **+0.02%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.19%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **±0.04%**.

C.10.39.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.4654E-11	2.4650E-11	0.02
URIN BLADDER	3.6570E-10	3.6570E-10	0.00
BRAIN	8.1301E-11	8.1300E-11	0.00
BREAST	3.1601E-11	3.1600E-11	0.00
GALL BLADDER	2.2351E-11	N/A	N/A
HEART	3.9727E-11	N/A	N/A
KIDNEYS	2.2105E-11	2.2100E-11	0.02
LIVER	2.4256E-11	2.4250E-11	0.02
MUSCLE	6.9896E-11	6.9900E-11	-0.01
OVARIES	2.3894E-11	2.3890E-11	0.02
PANCREAS	2.6972E-11	2.6970E-11	0.01
TESTES	1.9388E-11	1.9380E-11	0.04
THYROID	2.0914E-07	2.0920E-07	-0.03
R.B.M.	5.5000E-11	5.5000E-11	0.00
BONE SURFACE	6.9081E-11	6.9080E-11	0.00
STOMACH	7.3448E-11	7.3440E-11	0.01
S.I.	2.2972E-11	2.2970E-11	0.01
U.L.I.	3.1689E-11	3.1680E-11	0.03
L.L.I.	5.1145E-11	5.1150E-11	-0.01
SKIN	3.7251E-11	3.7250E-11	0.00
SPLEEN	2.4701E-11	2.4700E-11	0.00
THYMUS	8.5215E-11	8.5220E-11	-0.01
UTERUS	2.7815E-11	2.7810E-11	0.02
ET	4.8076E-09	4.8070E-09	0.01
LUNG	8.0555E-11	8.0710E-11	-0.19
COLON	4.0102E-11	4.0100E-11	0.00
ET1	1.6131E-06	1.6130E-06	0.01
ET2	3.1979E-09	3.1980E-09	0.00
LN(ET)	2.8721E-09	2.8720E-09	0.00
BBsec	1.2629E-10	1.2640E-10	-0.09
BBbas	1.1151E-10	1.1160E-10	-0.08
bb	6.4827E-11	6.4810E-11	0.03
AI	5.8013E-11	5.8010E-11	0.01
LN(TH)	5.6736E-11	5.6730E-11	0.01
ESOPHAGUS	8.5215E-11	8.5220E-11	-0.01
REMAINDER	**7.0743E-11**	**7.0730E-11**	**0.02**
C.E.D.	**1.0522E-08**	**1.0520E-08**	**0.02**
Maximum			**-0.19**

C.10.39.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.0735E-11	5.0720E-11	0.03
URIN BLADDER	7.5525E-10	7.5520E-10	0.01
BRAIN	1.4412E-10	1.4410E-10	0.01
BREAST	5.9591E-11	5.9580E-11	0.02
GALL BLADDER	4.7543E-11	N/A	N/A
HEART	7.5592E-11	N/A	N/A
KIDNEYS	4.6193E-11	4.6180E-11	0.03
LIVER	4.8994E-11	4.8980E-11	0.03
MUSCLE	1.2627E-10	1.2630E-10	-0.02
OVARIES	5.1831E-11	5.1820E-11	0.02
PANCREAS	6.0775E-11	6.0760E-11	0.02
TESTES	4.0238E-11	4.0220E-11	0.04
THYROID	4.3144E-07	4.3150E-07	-0.01
R.B.M.	1.0118E-10	1.0120E-10	-0.02
BONE SURFACE	1.2514E-10	1.2510E-10	0.03
STOMACH	3.0351E-10	3.0350E-10	0.00
S.I.	5.3584E-11	5.3570E-11	0.03
U.L.I.	8.8254E-11	8.8240E-11	0.02
L.L.I.	1.6154E-10	1.6160E-10	-0.04
SKIN	6.9088E-11	6.9080E-11	0.01

SPLEEN	5.3527E-11	5.3510E-11	0.03
THYMUS	1.5158E-10	1.5160E-10	-0.01
UTERUS	5.8609E-11	5.8600E-11	0.02
ET	1.4755E-10	1.4750E-10	0.03
LUNG	1.0310E-10	1.0320E-10	-0.10
COLON	1.1995E-10	1.1990E-10	0.04
ET1	1.4755E-10	1.4750E-10	0.03
ET2	1.4755E-10	1.4750E-10	0.03
LN(ET)	1.4755E-10	1.4750E-10	0.03
BBsec	1.0310E-10	1.0310E-10	0.00
BBbas	1.0310E-10	1.0310E-10	0.00
bb	1.0310E-10	1.0310E-10	0.00
AI	1.0310E-10	1.0310E-10	0.00
LN(TH)	1.0310E-10	1.0310E-10	0.00
ESOPHAGUS	1.5158E-10	1.5160E-10	-0.01
REMAINDER	**1.2394E-10**	**1.2390E-10**	**0.03**
C.E.D.	**2.1717E-08**	**2.1720E-08**	**-0.01**
Maximum			**-0.10**

C.10.40. ^{133}I – Iodine-133 (Particulate)

Difference in ***Effective Dose***: **+0.01%** (Inhalation/Ingestion).
Maximum difference in ***Organ Dose***: **-0.25%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.04%**.

C.10.40.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.0760E-11	2.0760E-11	0.00
URIN BLADDER	5.4469E-10	5.4470E-10	0.00
BRAIN	3.4536E-11	3.4530E-11	0.02
BREAST	2.0520E-11	2.0520E-11	0.00
GALL BLADDER	2.0160E-11	N/A	N/A
HEART	2.4923E-11	N/A	N/A
KIDNEYS	1.9604E-11	1.9600E-11	0.02
LIVER	1.9959E-11	1.9960E-11	-0.01
MUSCLE	3.2527E-11	3.2530E-11	-0.01
OVARIES	2.2742E-11	2.2740E-11	0.01
PANCREAS	2.3674E-11	2.3670E-11	0.02
TESTES	1.9346E-11	1.9350E-11	-0.02
THYROID	4.0376E-08	4.0380E-08	-0.01
R.B.M.	2.8551E-11	2.8550E-11	0.00
BONE SURFACE	3.1036E-11	3.1030E-11	0.02
STOMACH	1.2168E-10	1.2170E-10	-0.02
S.I.	2.3094E-11	2.3090E-11	0.02
U.L.I.	3.0407E-11	3.0410E-11	-0.01
L.L.I.	3.8942E-11	3.8940E-11	0.01
SKIN	2.1793E-11	2.1790E-11	0.01
SPLEEN	2.1344E-11	2.1340E-11	0.02
THYMUS	3.6984E-11	3.6980E-11	0.01
UTERUS	2.7384E-11	2.7380E-11	0.01
ET	4.0772E-09	4.0770E-09	0.00
LUNG	5.3776E-11	5.3910E-11	-0.25
COLON	3.4098E-11	3.4090E-11	0.02
ET1	1.0391E-06	1.0390E-06	0.01
ET2	3.0415E-09	3.0410E-09	0.02
LN(ET)	2.6996E-09	2.6990E-09	0.02
BBsec	9.8204E-11	9.8350E-11	-0.15
BBbas	8.8522E-11	8.8640E-11	-0.13
bb	3.6685E-11	3.6670E-11	0.04
AI	3.1356E-11	3.1360E-11	-0.01
LN(TH)	2.8627E-11	2.8630E-11	-0.01
ESOPHAGUS	3.6984E-11	3.6980E-11	0.01
REMAINDER	**3.4154E-11**	**3.4150E-11**	**0.01**
C.E.D.	**2.0853E-09**	**2.0850E-09**	**0.01**
Maximum			**-0.25**

C.10.40.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.2876E-11	4.2870E-11	0.01
URIN BLADDER	1.1090E-09	1.1090E-09	0.00
BRAIN	4.7942E-11	4.7940E-11	0.00
BREAST	3.6262E-11	3.6260E-11	0.01
GALL BLADDER	4.3255E-11	N/A	N/A
HEART	4.5166E-11	N/A	N/A
KIDNEYS	4.1135E-11	4.1130E-11	0.01
LIVER	3.9998E-11	3.9990E-11	0.02
MUSCLE	4.9879E-11	4.9870E-11	0.02
OVARIES	4.8633E-11	4.8630E-11	0.01
PANCREAS	5.6553E-11	5.6550E-11	0.01
TESTES	3.9572E-11	3.9570E-11	0.01
THYROID	8.2133E-08	8.2130E-08	0.00
R.B.M.	4.6825E-11	4.6820E-11	0.01
BONE SURFACE	4.8541E-11	4.8540E-11	0.00
STOMACH	5.5441E-10	5.5440E-10	0.00
S.I.	5.7201E-11	5.7200E-11	0.00
U.L.I.	9.5546E-11	9.5540E-11	0.01
L.L.I.	1.2999E-10	1.3000E-10	-0.01
SKIN	3.6970E-11	3.6970E-11	0.00
SPLEEN	4.8015E-11	4.8010E-11	0.01
THYMUS	5.2232E-11	5.2230E-11	0.00
UTERUS	5.7010E-11	5.7000E-11	0.02
ET	5.0722E-11	5.0720E-11	0.00
LUNG	4.5196E-11	4.5240E-11	-0.10
COLON	1.1044E-10	1.1040E-10	0.04
ET1	5.0722E-11	5.0720E-11	0.00
ET2	5.0722E-11	5.0720E-11	0.00
LN(ET)	5.0722E-11	5.0720E-11	0.00
BBsec	4.5196E-11	4.5190E-11	0.01
BBbas	4.5196E-11	4.5190E-11	0.01
bb	4.5196E-11	4.5190E-11	0.01
AI	4.5196E-11	4.5190E-11	0.01
LN(TH)	4.5196E-11	4.5190E-11	0.01
ESOPHAGUS	5.2232E-11	5.2230E-11	0.00
REMAINDER	**4.9883E-11**	**4.9880E-11**	**0.01**
C.E.D.	**4.2724E-09**	**4.2720E-09**	**0.01**
Maximum			**-0.10**

C.10.41. ^{134}I – Iodine-134 (Particulate)

Maximum difference in ***Effective Dose***: **+0.03%** (Ingestion).
Maximum difference in ***Organ Dose***: **-0.30%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.08%**.

C.10.41.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.1778E-12	8.1760E-12	0.02
URIN BLADDER	5.2812E-11	5.2800E-11	0.02
BRAIN	9.0772E-12	9.0750E-12	0.02
BREAST	6.3171E-12	6.3150E-12	0.03
GALL BLADDER	7.8190E-12	N/A	N/A
HEART	9.0236E-12	N/A	N/A
KIDNEYS	7.3873E-12	7.3860E-12	0.02
LIVER	6.9897E-12	6.9880E-12	0.02
MUSCLE	9.4427E-12	9.4400E-12	0.03
OVARIES	7.1069E-12	7.1050E-12	0.03
PANCREAS	1.3654E-11	1.3650E-11	0.03
TESTES	5.4816E-12	5.4800E-12	0.03
THYROID	3.5318E-10	3.5300E-10	0.05
R.B.M.	8.4595E-12	8.4570E-12	0.03
BONE SURFACE	9.0469E-12	9.0450E-12	0.02
STOMACH	1.0429E-10	1.0430E-10	-0.01
S.I.	9.2919E-12	9.2900E-12	0.02
U.L.I.	8.7232E-12	8.7210E-12	0.03
L.L.I.	7.1681E-12	7.1660E-12	0.03
SKIN	6.0829E-12	6.0810E-12	0.03
SPLEEN	1.0385E-11	1.0380E-11	0.05
THYMUS	1.1066E-11	1.1060E-11	0.05
UTERUS	8.0628E-12	8.0610E-12	0.02
ET	1.5114E-09	1.5110E-09	0.03
LUNG	3.2033E-11	3.2130E-11	-0.30
COLON	8.0507E-12	8.0490E-12	0.02
ET1	9.5109E-08	9.5080E-08	0.03
ET2	1.4180E-09	1.4180E-09	0.00
LN(ET)	1.1008E-09	1.1010E-09	-0.02
BBsec	6.8920E-11	6.9040E-11	-0.17
BBbas	6.2464E-11	6.2570E-11	-0.17
bb	1.7384E-11	1.7370E-11	0.08
AI	1.3090E-11	1.3090E-11	0.00
LN(TH)	9.6056E-12	9.6030E-12	0.03
ESOPHAGUS	1.1066E-11	1.1060E-11	0.05
REMAINDER	**7.6041E-10**	**7.6020E-10**	**0.03**
C.E.D.	**7.9451E-11**	**7.9440E-11**	**0.01**
Maximum			**-0.30**

C.10.41.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.9017E-11	1.9010E-11	0.04
URIN BLADDER	8.2164E-11	8.2130E-11	0.04
BRAIN	7.0786E-12	7.0760E-12	0.04
BREAST	9.2242E-12	9.2210E-12	0.03
GALL BLADDER	1.9306E-11	N/A	N/A
HEART	1.6814E-11	N/A	N/A
KIDNEYS	1.7505E-11	1.7500E-11	0.03
LIVER	1.3724E-11	1.3720E-11	0.03
MUSCLE	1.1818E-11	1.1810E-11	0.07
OVARIES	1.3711E-11	1.3710E-11	0.01
PANCREAS	4.8833E-11	4.8820E-11	0.03
TESTES	8.7193E-12	8.7160E-12	0.04
THYROID	5.3594E-10	5.3570E-10	0.04
R.B.M.	1.1443E-11	1.1440E-11	0.03
BONE SURFACE	1.0517E-11	1.0510E-11	0.07
STOMACH	5.4868E-10	5.4860E-10	0.01
S.I.	2.7595E-11	2.7590E-11	0.02
U.L.I.	2.5517E-11	2.5510E-11	0.03
L.L.I.	1.4612E-11	1.4610E-11	0.01
SKIN	7.9665E-12	7.9640E-12	0.03
SPLEEN	3.2920E-11	3.2910E-11	0.03
THYMUS	1.0198E-11	1.0190E-11	0.08
UTERUS	1.4839E-11	1.4830E-11	0.06
ET	8.3440E-12	8.3410E-12	0.04
LUNG	1.1817E-11	1.1830E-11	-0.11
COLON	2.0801E-11	2.0800E-11	0.00
ET1	8.3440E-12	8.3410E-12	0.04
ET2	8.3440E-12	8.3410E-12	0.04
LN(ET)	8.3440E-12	8.3410E-12	0.04
BBsec	1.1817E-11	1.1810E-11	0.06
BBbas	1.1817E-11	1.1810E-11	0.06
bb	1.1817E-11	1.1810E-11	0.06
AI	1.1817E-11	1.1810E-11	0.06
LN(TH)	1.1817E-11	1.1810E-11	0.06
ESOPHAGUS	1.0198E-11	1.0190E-11	0.08
REMAINDER	**1.2240E-11**	**1.2240E-11**	**0.00**
C.E.D.	**1.0723E-10**	**1.0720E-10**	**0.03**
Maximum			**-0.11**

C.10.42. ^{135}I – Iodine-135 (Particulate)

Difference in ***Effective Dose***: **0.00%** (Inhalation/Ingestion).
Maximum difference in ***Organ Dose***: **-0.24%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **±0.02%**.

C.10.42.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.1246E-11	2.1250E-11	-0.02
URIN BLADDER	3.3107E-10	3.3110E-10	-0.01
BRAIN	3.1285E-11	3.1280E-11	0.02
BREAST	1.9381E-11	1.9380E-11	0.01
GALL BLADDER	2.0513E-11	N/A	N/A

HEART	2.4996E-11	N/A	N/A
KIDNEYS	1.9631E-11	1.9630E-11	0.01
LIVER	1.9608E-11	1.9610E-11	-0.01
MUSCLE	3.0502E-11	3.0500E-11	0.01
OVARIES	2.3334E-11	2.3330E-11	0.02
PANCREAS	2.6982E-11	2.6980E-11	0.01
TESTES	1.8904E-11	1.8900E-11	0.02
THYROID	8.1130E-09	8.1130E-09	0.00
R.B.M.	2.6506E-11	2.6500E-11	0.02
BONE SURFACE	2.9226E-11	2.9220E-11	0.02
STOMACH	1.1821E-10	1.1820E-10	0.01
S.I.	2.3215E-11	2.3210E-11	0.02
U.L.I.	2.6209E-11	2.6210E-11	0.00
L.L.I.	2.7385E-11	2.7390E-11	-0.02
SKIN	1.9753E-11	1.9750E-11	0.02
SPLEEN	2.2673E-11	2.2670E-11	0.01
THYMUS	3.6933E-11	3.6930E-11	0.01
UTERUS	2.9135E-11	2.9130E-11	0.02
ET	4.1037E-09	4.1030E-09	0.02
LUNG	5.1427E-11	5.1550E-11	-0.24
COLON	2.6718E-11	2.6720E-11	-0.01
ET1	5.1909E-07	5.1900E-07	0.02
ET2	3.5886E-09	3.5880E-09	0.02
LN(ET)	3.2577E-09	3.2570E-09	0.02
BBsec	9.4735E-11	9.4870E-11	-0.14
BBbas	8.4311E-11	8.4430E-11	-0.14
bb	3.5135E-11	3.5120E-11	0.04
AI	2.9694E-11	2.9690E-11	0.01
LN(TH)	2.7307E-11	2.7310E-11	-0.01
ESOPHAGUS	3.6933E-11	3.6930E-11	0.01
REMAINDER	**3.2202E-11**	**3.2200E-11**	**0.01**
C.E.D.	**4.5951E-10**	**4.5950E-10**	**0.00**
Maximum			**-0.24**

C.10.42.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.4292E-11	4.4290E-11	0.00
URIN BLADDER	6.5335E-10	6.5340E-10	-0.01
BRAIN	3.4613E-11	3.4610E-11	0.01
BREAST	3.0813E-11	3.0810E-11	0.01
GALL BLADDER	4.5195E-11	N/A	N/A
HEART	4.3723E-11	N/A	N/A
KIDNEYS	4.2313E-11	4.2310E-11	0.01
LIVER	3.8928E-11	3.8920E-11	0.02
MUSCLE	4.1842E-11	4.1840E-11	0.00
OVARIES	4.9198E-11	4.9190E-11	0.02
PANCREAS	7.2620E-11	7.2620E-11	0.00
TESTES	3.7522E-11	3.7520E-11	0.01
THYROID	1.5959E-08	1.5960E-08	-0.01
R.B.M.	3.9697E-11	3.9690E-11	0.02
BONE SURFACE	4.0682E-11	4.0680E-11	0.00
STOMACH	5.4235E-10	5.4230E-10	0.01
S.I.	5.7606E-11	5.7600E-11	0.01
U.L.I.	7.5370E-11	7.5370E-11	0.00
L.L.I.	7.0681E-11	7.0680E-11	0.00
SKIN	2.9763E-11	2.9760E-11	0.01
SPLEEN	5.5970E-11	5.5970E-11	0.00
THYMUS	4.2220E-11	4.2220E-11	0.00
UTERUS	5.9632E-11	5.9630E-11	0.00
ET	3.8922E-11	3.8920E-11	0.01
LUNG	3.8276E-11	3.8310E-11	-0.09
COLON	7.3342E-11	7.3340E-11	0.00
ET1	3.8922E-11	3.8920E-11	0.01
ET2	3.8922E-11	3.8920E-11	0.01
LN(ET)	3.8922E-11	3.8920E-11	0.01
BBsec	3.8276E-11	3.8270E-11	0.02
BBbas	3.8276E-11	3.8270E-11	0.02
bb	3.8276E-11	3.8270E-11	0.02
AI	3.8276E-11	3.8270E-11	0.02
LN(TH)	3.8276E-11	3.8270E-11	0.02
ESOPHAGUS	4.2220E-11	4.2220E-11	0.00
REMAINDER	**4.2075E-11**	**4.2070E-11**	**0.01**
C.E.D.	**9.3210E-10**	**9.3210E-10**	**0.00**
Maximum			**-0.09**

C.10.43. ^{192}Ir – Iridium-192

Maximum difference in ***Effective Dose***: **-0.28%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.33%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.07%**.

C.10.43.1. Acute Inhalation (Type F: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.29E-09	2.29E-09	0.00
URIN BLADDER	1.36E-09	1.36E-09	0.03
BRAIN	9.93E-10	9.92E-10	0.07
BREAST	1.04E-09	1.04E-09	0.05
GALL BLADDER	2.87E-09	N/A	N/A
HEART	1.55E-09	N/A	N/A
KIDNEYS	1.02E-08	1.02E-08	0.00
LIVER	1.04E-08	1.04E-08	-0.04
MUSCLE	1.27E-09	1.27E-09	0.05
OVARIES	1.59E-09	1.59E-09	0.05
PANCREAS	2.29E-09	2.29E-09	0.01
TESTES	1.07E-09	1.07E-09	0.02
THYROID	1.16E-09	1.16E-09	0.06
R.B.M.	1.41E-09	1.41E-09	0.01
BONE SURFACE	1.44E-09	1.44E-09	0.02
STOMACH	1.69E-09	1.69E-09	0.01
S.I.	1.83E-09	1.83E-09	0.04
U.L.I.	2.88E-09	2.88E-09	0.03
L.L.I.	4.78E-09	4.78E-09	0.01
SKIN	9.52E-10	9.51E-10	0.07
SPLEEN	8.86E-09	8.86E-09	-0.02
THYMUS	1.23E-09	1.23E-09	0.05
UTERUS	1.46E-09	1.46E-09	0.04
ET	9.83E-09	9.82E-09	0.02
LUNG	1.48E-09	1.49E-09	-0.09
COLON	3.70E-09	3.70E-09	0.03
ET1	1.94E-06	1.94E-06	0.03
ET2	7.89E-09	7.89E-09	0.02
LN(ET)	7.52E-09	7.52E-09	0.01

BBsec	1.53E-09	1.53E-09	0.06
BBbas	1.52E-09	1.52E-09	0.00
bb	1.47E-09	1.47E-09	0.06
AI	1.46E-09	1.46E-09	0.06
LN(TH)	1.46E-09	1.46E-09	0.03
ESOPHAGUS	1.23E-09	1.23E-09	0.05
REMAINDER	**1.42E-09**	**1.42E-09**	**0.04**
C.E.D.	**2.16E-09**	**2.16E-09**	**0.02**
Maximum			**-0.09**

C.10.43.2. Acute Inhalation (Type M; f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.44E-10	7.44E-10	0.00
URIN BLADDER	3.39E-10	3.39E-10	0.02
BRAIN	2.05E-10	2.05E-10	0.03
BREAST	5.35E-10	5.35E-10	0.01
GALL BLADDER	6.88E-10	N/A	N/A
HEART	8.94E-10	N/A	N/A
KIDNEYS	1.83E-09	1.83E-09	0.01
LIVER	2.02E-09	2.02E-09	0.00
MUSCLE	4.08E-10	4.08E-10	0.03
OVARIES	6.21E-10	6.21E-10	0.02
PANCREAS	6.69E-10	6.69E-10	0.00
TESTES	2.13E-10	2.13E-10	0.05
THYROID	3.48E-10	3.48E-10	0.03

C.10.43.3. Acute Inhalation (Type S: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.05E-10	6.05E-10	-0.01
URIN BLADDER	1.60E-10	1.60E-10	-0.02
BRAIN	7.46E-11	7.46E-11	0.02
BREAST	5.82E-10	5.82E-10	-0.01
GALL BLADDER	3.47E-10	N/A	N/A
HEART	1.02E-09	N/A	N/A
KIDNEYS	4.02E-10	4.02E-10	0.00
LIVER	6.67E-10	6.67E-10	-0.01
MUSCLE	3.09E-10	3.09E-10	0.00
OVARIES	4.48E-10	4.48E-10	0.00
PANCREAS	4.79E-10	4.79E-10	-0.02
TESTES	6.18E-11	6.18E-11	0.02
THYROID	2.58E-10	2.58E-10	-0.02
R.B.M.	3.94E-10	3.94E-10	-0.01
BONE SURFACE	3.14E-10	3.14E-10	-0.02
STOMACH	5.12E-10	5.13E-10	-0.01
S.I.	6.91E-10	6.91E-10	0.00
U.L.I.	2.24E-09	2.24E-09	0.01
L.L.I.	5.72E-09	5.72E-09	-0.01
SKIN	1.50E-10	1.50E-10	-0.01
SPLEEN	5.68E-10	5.68E-10	-0.02
THYMUS	7.08E-10	7.08E-10	-0.01
UTERUS	2.24E-10	2.24E-10	-0.01
ET	1.49E-08	1.49E-08	-0.03
LUNG	3.43E-08	3.44E-08	-0.33
COLON	3.74E-09	3.74E-09	0.03
ET1	1.94E-06	1.94E-06	0.01
ET2	1.30E-08	1.30E-08	0.02
LN(ET)	7.47E-09	7.47E-09	0.01
BBsec	7.63E-08	7.65E-08	-0.21
BBbas	6.23E-08	6.25E-08	-0.20
bb	1.99E-08	1.98E-08	0.08
AI	1.39E-08	1.39E-08	-0.05
LN(TH)	3.84E-09	3.84E-09	-0.03
R.B.M.	4.89E-10	4.89E-10	0.01
BONE SURFACE	4.34E-10	4.34E-10	0.01
STOMACH	6.37E-10	6.36E-10	0.02
S.I.	8.64E-10	8.64E-10	0.00
U.L.I.	2.37E-09	2.37E-09	0.00
L.L.I.	5.69E-09	5.69E-09	-0.01
SKIN	2.47E-10	2.47E-10	0.05
SPLEEN	1.73E-09	1.73E-09	-0.01
THYMUS	6.49E-10	6.49E-10	0.01
UTERUS	4.08E-10	4.08E-10	0.02
ET	1.28E-08	1.28E-08	-0.02
LUNG	2.61E-08	2.62E-08	-0.33
COLON	3.80E-09	3.80E-09	0.04
ET1	1.94E-06	1.94E-06	0.01
ET2	1.09E-08	1.09E-08	0.01
LN(ET)	7.15E-09	7.15E-09	0.01
BBsec	6.07E-08	6.08E-08	-0.20
BBbas	4.95E-08	4.96E-08	-0.20
bb	1.42E-08	1.42E-08	0.09
AI	9.01E-09	9.02E-09	-0.02
LN(TH)	2.48E-09	2.48E-09	-0.03
ESOPHAGUS	6.49E-10	6.49E-10	0.01
REMAINDER	**4.37E-10**	**4.37E-10**	**0.04**
C.E.D.	**4.07E-09**	**4.08E-09**	**-0.26**
Maximum			**-0.33**
ESOPHAGUS	7.08E-10	7.08E-10	-0.01
REMAINDER	**3.17E-10**	**3.16E-10**	**0.06**
C.E.D.	**4.90E-09**	**4.92E-09**	**-0.28**
Maximum			**-0.33**

C.10.43.4. Acute Ingestion (f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.33E-10	1.33E-10	-0.01
URIN BLADDER	3.39E-10	3.39E-10	0.00
BRAIN	3.42E-11	3.42E-11	0.07
BREAST	4.57E-11	4.57E-11	0.05
GALL BLADDER	3.68E-10	N/A	N/A
HEART	7.59E-11	N/A	N/A
KIDNEYS	4.82E-10	4.83E-10	-0.01
LIVER	4.43E-10	4.43E-10	0.01
MUSCLE	1.48E-10	1.48E-10	0.01
OVARIES	9.61E-10	9.61E-10	0.01
PANCREAS	1.87E-10	1.87E-10	-0.01
TESTES	1.28E-10	1.28E-10	0.04
THYROID	4.11E-11	4.11E-11	0.07
R.B.M.	2.19E-10	2.19E-10	0.00
BONE SURFACE	1.30E-10	1.30E-10	0.05
STOMACH	5.53E-10	5.53E-10	0.00
S.I.	1.47E-09	1.47E-09	-0.02
U.L.I.	4.97E-09	4.97E-09	0.01
L.L.I.	1.30E-08	1.30E-08	0.03
SKIN	6.85E-11	6.85E-11	0.04
SPLEEN	3.96E-10	3.96E-10	0.00
THYMUS	4.92E-11	4.92E-11	0.06
UTERUS	4.63E-10	4.63E-10	0.00
ET	4.11E-11	4.11E-11	0.07
LUNG	6.54E-11	6.54E-11	-0.06
COLON	8.44E-09	8.44E-09	0.04
ET1	4.11E-11	4.11E-11	0.07
ET2	4.11E-11	4.11E-11	0.07
LN(ET)	4.11E-11	4.11E-11	0.07

BBsec	6.54E-11	6.54E-11	0.03
BBbas	6.54E-11	6.54E-11	0.03
bb	6.54E-11	6.54E-11	0.03
AI	6.54E-11	6.54E-11	0.03
LN(TH)	6.54E-11	6.54E-11	0.03
ESOPHAGUS	4.92E-11	4.92E-11	0.06
REMAINDER	**1.76E-10**	**1.76E-10**	**-0.03**
C.E.D.	**1.36E-09**	**1.36E-09**	**0.00**
Maximum			**0.07**

C.10.44. ^{140}La – Lanthanum-140

Maximum difference in ***Effective Dose***: **-0.04%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.31%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.06%**.

C.10.44.1. Acute Inhalation (Type F: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.0769E-10	3.0770E-10	0.00
URIN BLADDER	1.6501E-10	1.6500E-10	0.01
BRAIN	1.1932E-10	1.1930E-10	0.02
BREAST	1.1667E-10	1.1660E-10	0.06
GALL BLADDER	5.2937E-10	N/A	N/A
HEART	2.0335E-10	N/A	N/A
KIDNEYS	2.5545E-10	2.5540E-10	0.02
LIVER	2.4356E-09	2.4360E-09	-0.02
MUSCLE	1.7825E-10	1.7820E-10	0.03
OVARIES	3.8394E-10	3.8390E-10	0.01
PANCREAS	2.8327E-10	2.8330E-10	-0.01
TESTES	9.1859E-11	9.1840E-11	0.02
THYROID	1.2902E-10	1.2900E-10	0.02
R.B.M.	3.7806E-10	3.7810E-10	-0.01
BONE SURFACE	3.3317E-10	3.3320E-10	-0.01
STOMACH	3.5672E-10	3.5670E-10	0.01
S.I.	6.8198E-10	6.8200E-10	0.00
U.L.I.	2.0011E-09	2.0010E-09	0.00
L.L.I.	3.5607E-09	3.5610E-09	-0.01
SKIN	1.1014E-10	1.1010E-10	0.04
SPLEEN	1.4577E-10	1.4570E-10	0.05
THYMUS	1.6290E-10	1.6290E-10	0.00
UTERUS	2.2879E-10	2.2880E-10	0.00
ET	1.3394E-08	1.3390E-08	0.03
LUNG	2.2111E-10	2.2140E-10	-0.13
COLON	2.6755E-09	2.6750E-09	0.02
ET1	1.3557E-06	1.3560E-06	-0.02
ET2	1.2050E-08	1.2050E-08	0.00
LN(ET)	1.1701E-08	1.1700E-08	0.01
BBsec	2.6529E-10	2.6540E-10	-0.04
BBbas	2.5716E-10	2.5730E-10	-0.05
bb	2.0364E-10	2.0360E-10	0.02
AI	1.9854E-10	1.9850E-10	0.02
LN(TH)	1.9497E-10	1.9490E-10	0.04
ESOPHAGUS	1.6290E-10	1.6290E-10	0.00
REMAINDER	**6.7906E-09**	**6.7900E-09**	**0.01**
C.E.D.	**1.0070E-09**	**1.0070E-09**	**0.00**
Maximum			**-0.13**

C.10.44.2. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.1515E-10	1.1510E-10	0.04
URIN BLADDER	1.7448E-10	1.7450E-10	-0.01
BRAIN	6.1232E-11	6.1230E-11	0.00
BREAST	7.9194E-11	7.9190E-11	0.01
GALL BLADDER	2.5363E-10	N/A	N/A
HEART	1.2839E-10	N/A	N/A
KIDNEYS	1.2689E-10	1.2690E-10	-0.01
LIVER	3.4775E-10	3.4780E-10	-0.01
MUSCLE	1.3380E-10	1.3380E-10	0.00
OVARIES	5.5675E-10	5.5680E-10	-0.01
PANCREAS	1.3938E-10	1.3940E-10	-0.01
TESTES	5.8408E-11	5.8410E-11	0.00
THYROID	7.7703E-11	7.7700E-11	0.00
R.B.M.	1.8136E-10	1.8140E-10	-0.02
BONE SURFACE	1.2296E-10	1.2300E-10	-0.03
STOMACH	4.6774E-10	4.6780E-10	-0.01
S.I.	1.0937E-09	1.0940E-09	-0.03
U.L.I.	3.6414E-09	3.6420E-09	-0.02
L.L.I.	6.8415E-09	6.8420E-09	-0.01
SKIN	6.3430E-11	6.3430E-11	0.00
SPLEEN	1.0716E-10	1.0720E-10	-0.04
THYMUS	1.2518E-10	1.2520E-10	-0.02
UTERUS	2.6437E-10	2.6440E-10	-0.01
ET	1.3908E-08	1.3910E-08	-0.01
LUNG	2.8302E-09	2.8390E-09	-0.31
COLON	5.0252E-09	5.0240E-09	0.02
ET1	1.3558E-06	1.3560E-06	-0.01
ET2	1.2565E-08	1.2560E-08	0.04
LN(ET)	1.1763E-08	1.1760E-08	0.03
BBsec	6.2548E-09	6.2660E-09	-0.18
BBbas	5.6122E-09	5.6220E-09	-0.17
bb	1.5478E-09	1.5460E-09	0.12
AI	1.0170E-09	1.0170E-09	0.00
LN(TH)	2.5915E-10	2.5920E-10	-0.02
ESOPHAGUS	1.2518E-10	1.2520E-10	-0.02
REMAINDER	**7.0293E-09**	**7.0280E-09**	**0.02**
C.E.D.	**1.5254E-09**	**1.5260E-09**	**-0.04**
Maximum			**-0.31**

C.10.44.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.0513E-10	1.0510E-10	0.03
URIN BLADDER	4.1844E-10	4.1840E-10	0.01
BRAIN	1.2703E-12	1.2700E-12	0.02
BREAST	2.5188E-11	2.5190E-11	-0.01
GALL BLADDER	4.8848E-10	N/A	N/A
HEART	5.2548E-11	N/A	N/A
KIDNEYS	2.2374E-10	2.2370E-10	0.02
LIVER	1.5912E-10	1.5910E-10	0.01
MUSCLE	1.7261E-10	1.7260E-10	0.01
OVARIES	1.3793E-09	1.3790E-09	0.02
PANCREAS	2.0708E-10	2.0710E-10	-0.01

TESTES	1.2954E-10	1.2950E-10	0.03
THYROID	5.2204E-12	5.2200E-12	0.01
R.B.M.	2.6017E-10	2.6020E-10	-0.01
BONE SURFACE	1.1399E-10	1.1400E-10	-0.01
STOMACH	1.0886E-09	1.0890E-09	-0.04
S.I.	2.7312E-09	2.7310E-09	0.01
U.L.I.	9.1971E-09	9.1970E-09	0.00
L.L.I.	1.7360E-08	1.7360E-08	0.00
SKIN	6.9248E-11	6.9250E-11	0.00
SPLEEN	1.5816E-10	1.5820E-10	-0.03
THYMUS	1.8760E-11	1.8760E-11	0.00
UTERUS	6.3897E-10	6.3900E-10	0.00
ET	5.2204E-12	5.2200E-12	0.01
LUNG	3.5479E-11	3.5510E-11	-0.09
COLON	1.2727E-08	1.2720E-08	0.06
ET1	5.2204E-12	5.2200E-12	0.01
ET2	5.2204E-12	5.2200E-12	0.01
LN(ET)	5.2204E-12	5.2200E-12	0.01
BBsec	3.5479E-11	3.5480E-11	0.00
BBbas	3.5479E-11	3.5480E-11	0.00
bb	3.5479E-11	3.5480E-11	0.00
AI	3.5479E-11	3.5480E-11	0.00
LN(TH)	3.5479E-11	3.5480E-11	0.00
ESOPHAGUS	1.8760E-11	1.8760E-11	0.00
REMAINDER	**2.1959E-10**	**2.1970E-10**	**-0.05**
C.E.D.	**2.0134E-09**	**2.0130E-09**	**0.02**
Maximum			**-0.09**

C.10.45. ^{174}Lu – Lutetium-174

Maximum difference in ***Effective Dose***: **-0.14%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.25%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.11%**.

C.10.45.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.36E-10	8.36E-10	-0.02
URIN BLADDER	2.32E-10	2.32E-10	-0.02
BRAIN	4.32E-10	4.32E-10	-0.03
BREAST	3.22E-10	3.22E-10	-0.01
GALL BLADDER	4.21E-10	N/A	N/A
HEART	5.56E-10	N/A	N/A
KIDNEYS	5.18E-10	5.18E-10	-0.02
LIVER	1.15E-09	1.15E-09	-0.04
MUSCLE	3.89E-10	3.89E-10	-0.02
OVARIES	5.76E-10	5.76E-10	-0.02
PANCREAS	5.00E-10	5.00E-10	-0.01
TESTES	1.30E-10	1.30E-10	-0.01
THYROID	3.33E-10	3.33E-10	-0.03
R.B.M.	6.03E-09	6.03E-09	-0.02
BONE SURFACE	6.04E-08	6.05E-08	-0.03
STOMACH	3.25E-10	3.25E-10	-0.03
S.I.	5.55E-10	5.55E-10	-0.02
U.L.I.	8.19E-10	8.19E-10	-0.02
L.L.I.	1.66E-09	1.66E-09	-0.01
SKIN	2.24E-10	2.25E-10	0.00
SPLEEN	3.56E-10	3.56E-10	-0.03
THYMUS	4.17E-10	4.17E-10	-0.02
UTERUS	3.52E-10	3.52E-10	-0.03
ET	5.15E-09	5.15E-09	-0.03
LUNG	9.12E-09	9.14E-09	-0.25
COLON	1.18E-09	1.18E-09	0.06
ET1	2.91E-07	2.91E-07	0.00
ET2	4.86E-09	4.87E-09	-0.01
LN(ET)	1.71E-09	1.71E-09	-0.01
BBsec	2.43E-08	2.43E-08	-0.23
BBbas	7.95E-09	7.97E-09	-0.19
bb	7.05E-09	7.04E-09	0.19
AI	4.22E-09	4.23E-09	-0.01
LN(TH)	1.50E-09	1.50E-09	-0.05
ESOPHAGUS	4.17E-10	4.17E-10	-0.02
REMAINDER	**3.98E-10**	**3.98E-10**	**-0.03**
C.E.D.	**2.86E-09**	**2.87E-09**	**-0.12**
Maximum			**-0.25**

C.10.45.2. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.52E-10	5.52E-10	-0.02
URIN BLADDER	4.21E-11	4.21E-11	-0.03
BRAIN	5.54E-11	5.54E-11	-0.02
BREAST	5.69E-10	5.69E-10	-0.02
GALL BLADDER	2.00E-10	N/A	N/A
HEART	1.05E-09	N/A	N/A
KIDNEYS	1.87E-10	1.87E-10	-0.03
LIVER	5.30E-10	5.31E-10	-0.03
MUSCLE	2.58E-10	2.58E-10	-0.04
OVARIES	1.22E-10	1.22E-10	-0.05
PANCREAS	4.04E-10	4.04E-10	-0.02
TESTES	1.61E-11	1.61E-11	-0.04
THYROID	2.13E-10	2.13E-10	-0.03
R.B.M.	5.95E-10	5.96E-10	-0.02
BONE SURFACE	3.82E-09	3.82E-09	-0.03
STOMACH	3.25E-10	3.25E-10	-0.02
S.I.	1.86E-10	1.86E-10	0.01
U.L.I.	5.18E-10	5.18E-10	-0.01
L.L.I.	1.26E-09	1.26E-09	0.02
SKIN	1.19E-10	1.19E-10	-0.01
SPLEEN	4.06E-10	4.06E-10	-0.01
THYMUS	6.90E-10	6.90E-10	-0.03
UTERUS	6.50E-11	6.50E-11	-0.01
ET	1.70E-08	1.70E-08	-0.02
LUNG	1.75E-08	1.76E-08	-0.21
COLON	8.37E-10	8.37E-10	0.03
ET1	2.92E-07	2.92E-07	0.00
ET2	1.67E-08	1.67E-08	-0.06
LN(ET)	9.43E-09	9.43E-09	-0.04
BBsec	3.31E-08	3.32E-08	-0.21
BBbas	1.22E-08	1.22E-08	-0.19
bb	1.22E-08	1.21E-08	0.16
AI	1.77E-08	1.77E-08	0.00
LN(TH)	1.26E-08	1.26E-08	-0.02
ESOPHAGUS	6.90E-10	6.90E-10	-0.03
REMAINDER	**2.56E-10**	**2.56E-10**	**0.11**

C.E.D.	**2.49E-09**	**2.50E-09**	**-0.14**
Maximum			**-0.21**

C.10.45.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.32E-11	1.32E-11	-0.03
URIN BLADDER	5.15E-11	5.15E-11	0.00
BRAIN	3.64E-12	3.64E-12	-0.02
BREAST	3.01E-12	3.01E-12	0.00
GALL BLADDER	4.85E-11	N/A	N/A
HEART	5.88E-12	N/A	N/A
KIDNEYS	2.18E-11	2.18E-11	0.01
LIVER	2.11E-11	2.11E-11	0.02
MUSCLE	2.01E-11	2.01E-11	-0.01
OVARIES	1.72E-10	1.73E-10	-0.02
PANCREAS	2.04E-11	2.04E-11	0.01
TESTES	1.39E-11	1.39E-11	-0.01
THYROID	2.68E-12	2.68E-12	-0.01
R.B.M.	7.60E-11	7.60E-11	-0.01
BONE SURFACE	5.36E-10	5.36E-10	-0.01
STOMACH	9.45E-11	9.45E-11	0.00
S.I.	2.74E-10	2.74E-10	0.00
U.L.I.	9.84E-10	9.84E-10	0.00
L.L.I.	2.63E-09	2.63E-09	0.01
SKIN	7.17E-12	7.17E-12	-0.01
SPLEEN	1.49E-11	1.49E-11	0.03
THYMUS	3.18E-12	3.18E-12	-0.02
UTERUS	7.40E-11	7.40E-11	0.01
ET	2.68E-12	2.68E-12	-0.01
LUNG	5.24E-12	5.24E-12	-0.11
COLON	1.69E-09	1.69E-09	0.04
ET1	2.68E-12	2.68E-12	-0.01
ET2	2.68E-12	2.68E-12	-0.01
LN(ET)	2.68E-12	2.68E-12	-0.01
BBsec	5.24E-12	5.24E-12	0.00
BBbas	5.24E-12	5.24E-12	0.00
bb	5.24E-12	5.24E-12	0.00
AI	5.24E-12	5.24E-12	0.00
LN(TH)	5.24E-12	5.24E-12	0.00
ESOPHAGUS	3.18E-12	3.18E-12	-0.02
REMAINDER	**2.48E-11**	**2.48E-11**	**-0.04**
C.E.D.	**2.70E-10**	**2.70E-10**	**0.03**
Maximum			**-0.11**

C.10.46. ^{54}Mn – Manganese-54

Maximum difference in ***Effective Dose***: **+0.02%** (Inhalation – type "F").
Maximum difference in ***Organ Dose***: **-0.12%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.04%**.

C.10.46.1. Acute Inhalation (Type F: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.2943E-09	1.2940E-09	0.02
URIN BLADDER	5.7525E-10	5.7530E-10	-0.01
BRAIN	5.2193E-10	5.2190E-10	0.01
BREAST	4.2796E-10	4.2800E-10	-0.01
GALL BLADDER	1.5137E-09	N/A	N/A
HEART	7.4937E-10	N/A	N/A
KIDNEYS	9.5816E-10	9.5820E-10	0.00
LIVER	2.9040E-09	2.9040E-09	0.00
MUSCLE	6.0937E-10	6.0940E-10	0.00
OVARIES	9.7704E-10	9.7700E-10	0.00
PANCREAS	1.0140E-09	1.0140E-09	0.00
TESTES	3.7393E-10	3.7390E-10	0.01
THYROID	5.0880E-10	5.0880E-10	0.00
R.B.M.	1.4232E-09	1.4230E-09	0.01
BONE SURFACE	1.7372E-09	1.7370E-09	0.01
STOMACH	6.5591E-10	6.5590E-10	0.00
S.I.	9.6127E-10	9.6130E-10	0.00
U.L.I.	1.1351E-09	1.1350E-09	0.01
L.L.I.	1.3789E-09	1.3790E-09	-0.01
SKIN	3.9274E-10	3.9270E-10	0.01
SPLEEN	5.8041E-10	5.8040E-10	0.00
THYMUS	5.4574E-10	5.4570E-10	0.01
UTERUS	7.1020E-10	7.1020E-10	0.00
ET	6.9163E-09	6.9160E-09	0.00
LUNG	7.2203E-10	7.2270E-10	-0.09
COLON	1.2406E-09	1.2400E-09	0.05
ET1	7.3597E-09	7.3590E-09	0.01
ET2	6.9158E-09	6.9150E-09	0.01
LN(ET)	6.9158E-09	6.9150E-09	0.01
BBsec	7.2203E-10	7.2200E-10	0.00
BBbas	7.2203E-10	7.2200E-10	0.00
bb	7.2202E-10	7.2200E-10	0.00
AI	7.2205E-10	7.2200E-10	0.01
LN(TH)	7.2202E-10	7.2200E-10	0.00
ESOPHAGUS	5.4574E-10	5.4570E-10	0.01
REMAINDER	**3.7671E-09**	**3.7670E-09**	**0.00**
C.E.D.	**1.1382E-09**	**1.1380E-09**	**0.02**
Maximum			**-0.09**

C.10.46.2. Acute Inhalation (Type M: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.8422E-10	9.8430E-10	-0.01
URIN BLADDER	2.8051E-10	2.8050E-10	0.00
BRAIN	2.2478E-10	2.2480E-10	-0.01
BREAST	7.4808E-10	7.4820E-10	-0.02
GALL BLADDER	7.4835E-10	N/A	N/A
HEART	1.2584E-09	N/A	N/A
KIDNEYS	5.3755E-10	5.3760E-10	-0.01
LIVER	1.4149E-09	1.4150E-09	-0.01
MUSCLE	4.7688E-10	4.7690E-10	0.00
OVARIES	6.2181E-10	6.2180E-10	0.00
PANCREAS	7.5749E-10	7.5760E-10	-0.01
TESTES	1.5109E-10	1.5110E-10	-0.01
THYROID	4.1072E-10	4.1080E-10	-0.02
R.B.M.	8.1028E-10	8.1030E-10	0.00
BONE SURFACE	8.0687E-10	8.0690E-10	0.00
STOMACH	5.8011E-10	5.8020E-10	-0.02

S.I.	6.0570E-10	6.0570E-10	0.00
U.L.I.	8.1941E-10	8.1940E-10	0.00
L.L.I.	1.1710E-09	1.1710E-09	0.00
SKIN	2.6905E-10	2.6910E-10	-0.02
SPLEEN	6.1597E-10	6.1600E-10	0.00
THYMUS	8.9159E-10	8.9170E-10	-0.01
UTERUS	3.7258E-10	3.7260E-10	-0.01
ET	7.3298E-09	7.3290E-09	0.01
LUNG	3.1102E-09	3.1140E-09	-0.12
COLON	9.7147E-10	9.7140E-10	0.01
ET1	7.7716E-09	7.7710E-09	0.01
ET2	7.3293E-09	7.3290E-09	0.00
LN(ET)	7.3395E-09	7.3390E-09	0.01
BBsec	3.0373E-09	3.0380E-09	-0.02
BBbas	3.0369E-09	3.0370E-09	0.00
bb	3.0290E-09	3.0290E-09	0.00
AI	3.2647E-09	3.2650E-09	-0.01
LN(TH)	3.0481E-09	3.0490E-09	-0.03
ESOPHAGUS	8.9159E-10	8.9170E-10	-0.01
REMAINDER	**3.9002E-09**	**3.9000E-09**	**0.01**
C.E.D.	**1.1741E-09**	**1.1740E-09**	**0.01**
Maximum			**-0.12**

C.10.46.3. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.7431E-10	4.7430E-10	0.00
URIN BLADDER	4.2027E-10	4.2030E-10	-0.01
BRAIN	1.6496E-10	1.6490E-10	0.04
BREAST	1.4961E-10	1.4960E-10	0.01
GALL BLADDER	7.0820E-10	N/A	N/A
HEART	2.6689E-10	N/A	N/A
KIDNEYS	4.1762E-10	4.1760E-10	0.00
LIVER	1.0319E-09	1.0320E-09	-0.01
MUSCLE	2.8254E-10	2.8250E-10	0.01
OVARIES	1.0760E-09	1.0760E-09	0.00
PANCREAS	4.2721E-10	4.2720E-10	0.00
TESTES	1.9818E-10	1.9820E-10	-0.01
THYROID	1.6212E-10	1.6210E-10	0.01
R.B.M.	6.0532E-10	6.0530E-10	0.00
BONE SURFACE	6.3012E-10	6.3010E-10	0.00
STOMACH	4.3110E-10	4.3110E-10	0.00
S.I.	9.6060E-10	9.6060E-10	0.00
U.L.I.	1.4206E-09	1.4210E-09	-0.03
L.L.I.	2.3464E-09	2.3460E-09	0.02
SKIN	1.6004E-10	1.6000E-10	0.03
SPLEEN	2.6231E-10	2.6230E-10	0.00
THYMUS	1.7878E-10	1.7880E-10	-0.01
UTERUS	5.6479E-10	5.6480E-10	0.00
ET	1.6212E-10	1.6210E-10	0.01
LUNG	2.4882E-10	2.4900E-10	-0.07
COLON	1.8209E-09	1.8210E-09	-0.01
ET1	1.6212E-10	1.6210E-10	0.01
ET2	1.6212E-10	1.6210E-10	0.01
LN(ET)	1.6212E-10	1.6210E-10	0.01
BBsec	2.4882E-10	2.4880E-10	0.01
BBbas	2.4882E-10	2.4880E-10	0.01
bb	2.4882E-10	2.4880E-10	0.01
AI	2.4882E-10	2.4880E-10	0.01
LN(TH)	2.4882E-10	2.4880E-10	0.01
ESOPHAGUS	1.7878E-10	1.7880E-10	-0.01
REMAINDER	**2.9371E-10**	**2.9380E-10**	**-0.03**
C.E.D.	**7.0766E-10**	**7.0760E-10**	**0.01**
Maximum			**-0.07**

C.10.47. ^{99}Mo – Molybdenum-99

Maximum difference in ***Effective Dose***: **-0.17%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.33%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.16%**.

C.10.47.1. Acute Inhalation (Type F: f_1 = 0.8)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.50E-10	1.50E-10	0.11
URIN BLADDER	1.95E-10	1.95E-10	0.05
BRAIN	1.13E-10	1.13E-10	0.15
BREAST	1.10E-10	1.10E-10	0.13
GALL BLADDER	1.69E-10	N/A	N/A
HEART	1.28E-10	N/A	N/A
KIDNEYS	1.38E-09	1.39E-09	-0.01
LIVER	1.25E-09	1.25E-09	-0.02
MUSCLE	1.21E-10	1.21E-10	0.10
OVARIES	1.30E-10	1.30E-10	0.13
PANCREAS	1.45E-10	1.45E-10	0.10
TESTES	1.10E-10	1.10E-10	0.08
THYROID	1.18E-10	1.18E-10	0.08
R.B.M.	2.77E-10	2.77E-10	0.07
BONE SURFACE	4.54E-10	4.54E-10	0.04
STOMACH	2.17E-10	2.17E-10	0.05
S.I.	1.78E-10	1.78E-10	0.06
U.L.I.	4.11E-10	4.10E-10	0.04
L.L.I.	7.80E-10	7.80E-10	0.02
SKIN	1.07E-10	1.07E-10	0.08
SPLEEN	1.26E-10	1.26E-10	0.06
THYMUS	1.21E-10	1.21E-10	0.12
UTERUS	1.25E-10	1.25E-10	0.10
ET	3.58E-09	3.58E-09	0.00
LUNG	1.52E-10	1.52E-10	-0.08
COLON	5.70E-10	5.70E-10	0.06
ET1	1.63E-06	1.63E-06	0.01
ET2	1.96E-09	1.96E-09	0.02
LN(ET)	1.61E-09	1.61E-09	0.01
BBsec	1.97E-10	1.97E-10	-0.01
BBbas	1.87E-10	1.87E-10	0.01
bb	1.34E-10	1.34E-10	0.13
AI	1.29E-10	1.29E-10	0.10
LN(TH)	1.26E-10	1.26E-10	0.09
ESOPHAGUS	1.21E-10	1.21E-10	0.12
REMAINDER	**1.86E-09**	**1.86E-09**	**0.04**
C.E.D.	**3.60E-10**	**3.60E-10**	**0.03**
Maximum			**0.15**

C.10.47.2. Acute Inhalation (Type S; f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.17E-11	2.17E-11	0.02
URIN BLADDER	3.55E-11	3.55E-11	0.01
BRAIN	1.13E-11	1.13E-11	0.11
BREAST	1.70E-11	1.70E-11	0.02
GALL BLADDER	3.65E-11	N/A	N/A
HEART	2.71E-11	N/A	N/A
KIDNEYS	7.82E-11	7.82E-11	0.00
LIVER	7.34E-11	7.34E-11	0.01
MUSCLE	2.34E-11	2.34E-11	0.02
OVARIES	8.84E-11	8.84E-11	0.01
PANCREAS	2.37E-11	2.37E-11	0.05
TESTES	1.26E-11	1.26E-11	0.07
THYROID	1.49E-11	1.49E-11	0.03
R.B.M.	3.55E-11	3.55E-11	0.01
BONE SURFACE	4.03E-11	4.03E-11	0.03
STOMACH	2.20E-10	2.20E-10	0.00
S.I.	5.13E-10	5.13E-10	0.00
U.L.I.	2.45E-09	2.45E-09	0.00
L.L.I.	5.68E-09	5.68E-09	0.00
SKIN	1.19E-11	1.19E-11	0.06
SPLEEN	2.05E-11	2.05E-11	0.05
THYMUS	2.43E-11	2.43E-11	0.05
UTERUS	4.38E-11	4.38E-11	0.02
ET	4.09E-09	4.09E-09	0.02
LUNG	4.59E-09	4.60E-09	-0.33
COLON	3.85E-09	3.85E-09	0.03
ET1	1.63E-06	1.63E-06	0.00
ET2	2.47E-09	2.47E-09	0.01
LN(ET)	1.52E-09	1.52E-09	-0.01
BBsec	1.13E-08	1.14E-08	-0.19
BBbas	9.66E-09	9.68E-09	-0.18
bb	2.17E-09	2.17E-09	0.14
AI	1.11E-09	1.11E-09	-0.01
LN(TH)	6.43E-11	6.43E-11	0.01
ESOPHAGUS	2.43E-11	2.43E-11	0.05
REMAINDER	**3.56E-11**	**3.56E-11**	**-0.01**
C.E.D.	**1.07E-09**	**1.07E-09**	**-0.17**
Maximum			**-0.33**

C.10.47.3. Acute Ingestion (f_1 = 0.8)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.71E-10	2.71E-10	0.10
URIN BLADDER	3.58E-10	3.58E-10	0.09
BRAIN	1.93E-10	1.93E-10	0.13
BREAST	1.95E-10	1.95E-10	0.11
GALL BLADDER	3.11E-10	N/A	N/A
HEART	2.27E-10	N/A	N/A
KIDNEYS	2.49E-09	2.49E-09	0.00
LIVER	2.24E-09	2.24E-09	0.03
MUSCLE	2.12E-10	2.12E-10	0.09
OVARIES	2.61E-10	2.61E-10	0.11
PANCREAS	2.65E-10	2.65E-10	0.09
TESTES	2.00E-10	2.00E-10	0.10
THYROID	2.02E-10	2.02E-10	0.13
R.B.M.	4.97E-10	4.97E-10	0.05
BONE SURFACE	8.09E-10	8.09E-10	0.05
STOMACH	6.93E-10	6.93E-10	0.03
S.I.	4.87E-10	4.87E-10	0.05
U.L.I.	1.55E-09	1.55E-09	-0.01
L.L.I.	3.29E-09	3.29E-09	0.01
SKIN	1.90E-10	1.90E-10	0.11
SPLEEN	2.30E-10	2.30E-10	0.11
THYMUS	2.06E-10	2.06E-10	0.10
UTERUS	2.37E-10	2.37E-10	0.12
ET	2.02E-10	2.02E-10	0.13
LUNG	2.21E-10	2.21E-10	0.03
COLON	2.30E-09	2.30E-09	0.03
ET1	2.02E-10	2.02E-10	0.13
ET2	2.02E-10	2.02E-10	0.13
LN(ET)	2.02E-10	2.02E-10	0.13
BBsec	2.21E-10	2.21E-10	0.12
BBbas	2.21E-10	2.21E-10	0.12
bb	2.21E-10	2.21E-10	0.12
AI	2.21E-10	2.21E-10	0.12
LN(TH)	2.21E-10	2.21E-10	0.12
ESOPHAGUS	2.06E-10	2.06E-10	0.10
REMAINDER	**1.35E-09**	**1.35E-09**	**0.04**
C.E.D.	**7.35E-10**	**7.35E-10**	**0.04**
Maximum			**0.13**

C.10.47.4. Acute Ingestion (f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.78E-11	2.78E-11	0.07
URIN BLADDER	8.43E-11	8.43E-11	0.02
BRAIN	1.18E-11	1.18E-11	0.16
BREAST	1.37E-11	1.37E-11	0.13
GALL BLADDER	7.87E-11	N/A	N/A
HEART	1.83E-11	N/A	N/A
KIDNEYS	1.77E-10	1.77E-10	0.01
LIVER	1.53E-10	1.53E-10	0.00
MUSCLE	3.51E-11	3.51E-11	0.05
OVARIES	2.10E-10	2.10E-10	0.01
PANCREAS	3.88E-11	3.88E-11	0.04
TESTES	2.98E-11	2.98E-11	0.04
THYROID	1.26E-11	1.26E-11	0.09
R.B.M.	6.51E-11	6.51E-11	0.04
BONE SURFACE	7.03E-11	7.03E-11	0.03
STOMACH	5.14E-10	5.14E-10	0.00
S.I.	1.22E-09	1.23E-09	-0.01
U.L.I.	5.87E-09	5.87E-09	0.00
L.L.I.	1.36E-08	1.36E-08	0.03
SKIN	1.90E-11	1.90E-11	0.07
SPLEEN	3.17E-11	3.17E-11	0.04
THYMUS	1.39E-11	1.39E-11	0.14
UTERUS	1.04E-10	1.04E-10	0.06
ET	1.26E-11	1.26E-11	0.09
LUNG	1.64E-11	1.65E-11	-0.03
COLON	9.22E-09	9.22E-09	0.04
ET1	1.26E-11	1.26E-11	0.09
ET2	1.26E-11	1.26E-11	0.09
LN(ET)	1.26E-11	1.26E-11	0.09
BBsec	1.64E-11	1.64E-11	0.09
BBbas	1.64E-11	1.64E-11	0.09
bb	1.64E-11	1.64E-11	0.09
AI	1.64E-11	1.64E-11	0.09
LN(TH)	1.64E-11	1.64E-11	0.09
ESOPHAGUS	1.39E-11	1.39E-11	0.14
REMAINDER	**6.03E-11**	**6.04E-11**	**-0.03**
C.E.D.	**1.24E-09**	**1.24E-09**	**0.06**
Maximum			**0.16**

C.10.48. ^{22}Na – Sodium-22

Maximum difference in ***Effective Dose***: **±0.01%** (Inhalation/Ingestion).
Maximum difference in ***Organ Dose***: **-0.14%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.04%**.

C.10.48.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.6532E-09	1.6530E-09	0.01
URIN BLADDER	2.0644E-09	2.0640E-09	0.02
BRAIN	1.3390E-09	1.3390E-09	0.00
BREAST	9.6566E-10	9.6550E-10	0.02
GALL BLADDER	1.3650E-09	N/A	N/A
HEART	1.2797E-09	N/A	N/A
KIDNEYS	1.4144E-09	1.4140E-09	0.03
LIVER	1.3246E-09	1.3250E-09	-0.03
MUSCLE	1.3171E-09	1.3170E-09	0.01
OVARIES	1.5439E-09	1.5440E-09	-0.01
PANCREAS	1.5204E-09	1.5200E-09	0.03
TESTES	1.1578E-09	1.1580E-09	-0.02
THYROID	1.3936E-09	1.3940E-09	-0.03
R.B.M.	2.2797E-09	2.2800E-09	-0.01
BONE SURFACE	3.1167E-09	3.1170E-09	-0.01
STOMACH	1.3068E-09	1.3070E-09	-0.02
S.I.	1.4609E-09	1.4610E-09	-0.01
U.L.I.	1.3836E-09	1.3840E-09	-0.03
L.L.I.	1.6057E-09	1.6060E-09	-0.02
SKIN	9.6100E-10	9.6090E-10	0.01
SPLEEN	1.3296E-09	1.3300E-09	-0.03
THYMUS	1.3007E-09	1.3010E-09	-0.02
UTERUS	1.5136E-09	1.5130E-09	0.04
ET	2.0046E-08	2.0040E-08	0.03
LUNG	1.3092E-09	1.3110E-09	-0.14
COLON	1.4797E-09	1.4800E-09	-0.02
ET1	1.8464E-06	1.8460E-06	0.02
ET2	1.8218E-08	1.8220E-08	-0.01
LN(ET)	1.7871E-08	1.7870E-08	0.01
BBsec	1.3556E-09	1.3560E-09	-0.03
BBbas	1.3429E-09	1.3430E-09	-0.01
bb	1.2923E-09	1.2920E-09	0.02
AI	1.2863E-09	1.2860E-09	0.02
LN(TH)	1.2850E-09	1.2850E-09	0.00
ESOPHAGUS	1.3007E-09	1.3010E-09	-0.02
REMAINDER	**1.0685E-08**	**1.0680E-08**	**0.05**
C.E.D.	**2.0013E-09**	**2.0010E-09**	**0.01**
Maximum			**-0.14**

C.10.48.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.4114E-09	3.4110E-09	0.01
URIN BLADDER	4.2702E-09	4.2700E-09	0.00
BRAIN	2.6246E-09	2.6240E-09	0.02
BREAST	1.9558E-09	1.9550E-09	0.04
GALL BLADDER	2.8256E-09	N/A	N/A
HEART	2.6020E-09	N/A	N/A
KIDNEYS	2.9237E-09	2.9230E-09	0.02
LIVER	2.7291E-09	2.7290E-09	0.00
MUSCLE	2.6167E-09	2.6160E-09	0.03
OVARIES	3.2043E-09	3.2040E-09	0.01
PANCREAS	3.1646E-09	3.1640E-09	0.02
TESTES	2.3937E-09	2.3930E-09	0.03
THYROID	2.7375E-09	2.7370E-09	0.02
R.B.M.	4.6383E-09	4.6380E-09	0.01
BONE SURFACE	6.3473E-09	6.3480E-09	-0.01
STOMACH	2.9472E-09	2.9470E-09	0.01
S.I.	3.0376E-09	3.0370E-09	0.02
U.L.I.	2.9011E-09	2.9010E-09	0.00
L.L.I.	3.4089E-09	3.4090E-09	0.00
SKIN	1.9361E-09	1.9360E-09	0.01
SPLEEN	2.7581E-09	2.7580E-09	0.00
THYMUS	2.5323E-09	2.5320E-09	0.01
UTERUS	3.1340E-09	3.1340E-09	0.00
ET	2.7375E-09	2.7370E-09	0.02
LUNG	2.5707E-09	2.5730E-09	-0.09
COLON	3.1207E-09	3.1200E-09	0.02
ET1	2.7375E-09	2.7370E-09	0.02
ET2	2.7375E-09	2.7370E-09	0.02
LN(ET)	2.7375E-09	2.7370E-09	0.02
BBsec	2.5707E-09	2.5700E-09	0.03
BBbas	2.5707E-09	2.5700E-09	0.03
bb	2.5707E-09	2.5700E-09	0.03
AI	2.5707E-09	2.5700E-09	0.03
LN(TH)	2.5707E-09	2.5700E-09	0.03
ESOPHAGUS	2.5323E-09	2.5320E-09	0.01
REMAINDER	**2.6332E-09**	**2.6330E-09**	**0.01**
C.E.D.	**3.1598E-09**	**3.1600E-09**	**-0.01**
Maximum			**-0.09**

C.10.49. ^{24}Na – Sodium-24

Maximum difference in ***Effective Dose***: **+0.01%** (Inhalation/Ingestion).
Maximum difference in ***Organ Dose***: **-0.14%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.06%**.

C.10.49.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.6830E-10	1.6830E-10	0.00
URIN BLADDER	2.0385E-10	2.0380E-10	0.02
BRAIN	1.7562E-10	1.7560E-10	0.01
BREAST	1.2643E-10	1.2640E-10	0.02
GALL BLADDER	1.5081E-10	N/A	N/A
HEART	1.5925E-10	N/A	N/A
KIDNEYS	1.5122E-10	1.5120E-10	0.01
LIVER	1.4738E-10	1.4740E-10	-0.01
MUSCLE	1.7119E-10	1.7120E-10	-0.01
OVARIES	1.5729E-10	1.5730E-10	-0.01
PANCREAS	1.7495E-10	1.7490E-10	0.03
TESTES	1.2588E-10	1.2580E-10	0.06
THYROID	1.8849E-10	1.8850E-10	-0.01
R.B.M.	2.1987E-10	2.1990E-10	-0.01
BONE SURFACE	2.9884E-10	2.9880E-10	0.01
STOMACH	3.1717E-10	3.1710E-10	0.02
S.I.	1.5714E-10	1.5710E-10	0.03
U.L.I.	1.6227E-10	1.6220E-10	0.04
L.L.I.	1.7313E-10	1.7310E-10	0.02
SKIN	1.2264E-10	1.2260E-10	0.03
SPLEEN	1.5369E-10	1.5370E-10	-0.01
THYMUS	1.9259E-10	1.9260E-10	-0.01
UTERUS	1.5602E-10	1.5600E-10	0.01
ET	1.3450E-08	1.3450E-08	0.00
LUNG	1.8854E-10	1.8880E-10	-0.14
COLON	1.6696E-10	1.6690E-10	0.04
ET1	9.1539E-07	9.1540E-07	0.00
ET2	1.2547E-08	1.2550E-08	-0.02
LN(ET)	1.2200E-08	1.2200E-08	0.00
BBsec	2.3202E-10	2.3210E-10	-0.03
BBbas	2.2466E-10	2.2480E-10	-0.06
bb	1.7111E-10	1.7110E-10	0.01
AI	1.6625E-10	1.6620E-10	0.03
LN(TH)	1.6258E-10	1.6250E-10	0.05
ESOPHAGUS	1.9259E-10	1.9260E-10	-0.01
REMAINDER	**6.8104E-09**	**6.8100E-09**	**0.01**
C.E.D.	**5.2623E-10**	**5.2620E-10**	**0.01**
Maximum			**-0.14**

C.10.49.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.3942E-10	3.3940E-10	0.01
URIN BLADDER	4.1513E-10	4.1510E-10	0.01
BRAIN	2.4623E-10	2.4620E-10	0.01
BREAST	2.2010E-10	2.2000E-10	0.05
GALL BLADDER	3.1368E-10	N/A	N/A
HEART	2.9152E-10	N/A	N/A
KIDNEYS	3.1162E-10	3.1160E-10	0.01
LIVER	2.9294E-10	2.9290E-10	0.01
MUSCLE	2.7123E-10	2.7120E-10	0.01
OVARIES	3.2798E-10	3.2790E-10	0.02
PANCREAS	3.9405E-10	3.9400E-10	0.01
TESTES	2.5527E-10	2.5520E-10	0.03
THYROID	2.7248E-10	2.7240E-10	0.03
R.B.M.	3.9261E-10	3.9250E-10	0.03
BONE SURFACE	5.3644E-10	5.3640E-10	0.01
STOMACH	1.1787E-09	1.1790E-09	-0.03
S.I.	3.4238E-10	3.4230E-10	0.02
U.L.I.	3.8618E-10	3.8610E-10	0.02
L.L.I.	4.1504E-10	4.1500E-10	0.01
SKIN	2.1053E-10	2.1050E-10	0.01
SPLEEN	3.3277E-10	3.3270E-10	0.02
THYMUS	2.6901E-10	2.6890E-10	0.04
UTERUS	3.2109E-10	3.2100E-10	0.03
ET	2.7248E-10	2.7240E-10	0.03
LUNG	2.6465E-10	2.6480E-10	-0.06
COLON	3.9866E-10	3.9860E-10	0.02
ET1	2.7248E-10	2.7240E-10	0.03
ET2	2.7248E-10	2.7240E-10	0.03
LN(ET)	2.7248E-10	2.7240E-10	0.03
BBsec	2.6465E-10	2.6460E-10	0.02
BBbas	2.6465E-10	2.6460E-10	0.02
bb	2.6465E-10	2.6460E-10	0.02
AI	2.6465E-10	2.6460E-10	0.02
LN(TH)	2.6465E-10	2.6460E-10	0.02
ESOPHAGUS	2.6901E-10	2.6890E-10	0.04
REMAINDER	**2.7290E-10**	**2.7280E-10**	**0.04**
C.E.D.	**4.2835E-10**	**4.2830E-10**	**0.01**
Maximum			**-0.06**

C.10.50. ^{94}Nb – Niobium-94

Maximum difference in ***Effective Dose***: **-0.17%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.27%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.05%**.

C.10.50.1. Acute Inhalation (Type M: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.5605E-09	3.5610E-09	-0.01
URIN BLADDER	1.1796E-09	1.1790E-09	0.05
BRAIN	1.1129E-09	1.1130E-09	-0.01
BREAST	2.3285E-09	2.3290E-09	-0.02
GALL BLADDER	3.0584E-09	N/A	N/A
HEART	3.8406E-09	N/A	N/A
KIDNEYS	5.4509E-09	5.4520E-09	-0.02
LIVER	8.0107E-09	8.0120E-09	-0.02
MUSCLE	1.7558E-09	1.7560E-09	-0.01
OVARIES	1.9211E-09	1.9210E-09	0.01
PANCREAS	2.8262E-09	2.8260E-09	0.01
TESTES	8.3157E-10	8.3140E-10	0.02
THYROID	1.5693E-09	1.5690E-09	0.02
R.B.M.	3.1148E-09	3.1150E-09	-0.01
BONE SURFACE	3.7466E-09	3.7470E-09	-0.01
STOMACH	2.1184E-09	2.1180E-09	0.02
S.I.	2.1815E-09	2.1810E-09	0.02
U.L.I.	3.6214E-09	3.6210E-09	0.01

L.L.I.	6.4447E-09	6.4450E-09	0.00
SKIN	1.1186E-09	1.1180E-09	0.05
SPLEEN	2.2554E-09	2.2550E-09	0.02
THYMUS	2.7569E-09	2.7570E-09	0.00
UTERUS	1.4129E-09	1.4130E-09	-0.01
ET	2.4634E-08	2.4630E-08	0.02
LUNG	3.8915E-08	3.9020E-08	-0.27
COLON	4.8423E-09	4.8410E-09	0.03
ET1	1.7489E-06	1.7490E-06	-0.01
ET2	2.2915E-08	2.2920E-08	-0.02
LN(ET)	1.5991E-08	1.5990E-08	0.01
BBsec	7.5646E-08	7.5790E-08	-0.19
BBbas	6.1897E-08	6.2010E-08	-0.18
bb	2.6422E-08	2.6410E-08	0.05
AI	2.1636E-08	2.1640E-08	-0.02
LN(TH)	1.0423E-08	1.0430E-08	-0.07
ESOPHAGUS	2.7569E-09	2.7570E-09	0.00
REMAINDER	**1.7908E-09**	**1.7900E-09**	**0.04**
C.E.D.	**7.1935E-09**	**7.2060E-09**	**-0.17**
Maximum			**-0.27**

C.10.50.2. Acute Inhalation (Type S: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.3013E-08	1.3010E-08	0.02
URIN BLADDER	6.7584E-10	6.7590E-10	-0.01
BRAIN	1.3496E-09	1.3500E-09	-0.03
BREAST	1.3791E-08	1.3790E-08	0.01
GALL BLADDER	4.9685E-09	N/A	N/A
HEART	2.3047E-08	N/A	N/A
KIDNEYS	5.3269E-09	5.3280E-09	-0.02
LIVER	1.1877E-08	1.1880E-08	-0.03
MUSCLE	5.8124E-09	5.8130E-09	-0.01
OVARIES	1.6413E-09	1.6410E-09	0.02
PANCREAS	9.4943E-09	9.4960E-09	-0.02
TESTES	3.2128E-10	3.2130E-10	-0.01
THYROID	5.6200E-09	5.6210E-09	-0.02
R.B.M.	7.4230E-09	7.4240E-09	-0.01
BONE SURFACE	5.8345E-09	5.8350E-09	-0.01
STOMACH	7.0408E-09	7.0420E-09	-0.02
S.I.	2.4273E-09	2.4280E-09	-0.03
U.L.I.	4.1089E-09	4.1090E-09	0.00
L.L.I.	6.5227E-09	6.5230E-09	0.00
SKIN	3.0782E-09	3.0790E-09	-0.03
SPLEEN	9.3768E-09	9.3780E-09	-0.01
THYMUS	1.6123E-08	1.6120E-08	0.02
UTERUS	1.0624E-09	1.0620E-09	0.04
ET	1.2345E-07	1.2350E-07	-0.04
LUNG	1.6327E-07	1.6350E-07	-0.14
COLON	5.1527E-09	5.1520E-09	0.01
ET1	1.8112E-06	1.8110E-06	0.01
ET2	1.2158E-07	1.2160E-07	-0.02
LN(ET)	3.0908E-07	3.0920E-07	-0.04
BBsec	1.5568E-07	1.5590E-07	-0.14
BBbas	1.3795E-07	1.3810E-07	-0.11
bb	1.6039E-07	1.6040E-07	-0.01
AI	1.8170E-07	1.8170E-07	0.00
LN(TH)	4.6256E-07	4.6260E-07	-0.01
ESOPHAGUS	1.6123E-08	1.6120E-08	0.02
REMAINDER	**5.6218E-09**	**5.6150E-09**	**0.12**
C.E.D.	**2.5049E-08**	**2.5070E-08**	**-0.08**
Maximum			**-0.14**

C.10.50.3. Acute Ingestion (f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.2081E-10	4.2080E-10	0.00
URIN BLADDER	6.5648E-10	6.5640E-10	0.01
BRAIN	1.4666E-10	1.4660E-10	0.04
BREAST	1.4130E-10	1.4130E-10	0.00
GALL BLADDER	8.2394E-10	N/A	N/A
HEART	2.3737E-10	N/A	N/A
KIDNEYS	9.6419E-10	9.6420E-10	0.00
LIVER	1.1810E-09	1.1810E-09	0.00
MUSCLE	3.5183E-10	3.5180E-10	0.01
OVARIES	1.8545E-09	1.8550E-09	-0.03
PANCREAS	4.6144E-10	4.6140E-10	0.01
TESTES	2.8051E-10	2.8050E-10	0.00
THYROID	1.4631E-10	1.4630E-10	0.01
R.B.M.	6.4364E-10	6.4360E-10	0.01
BONE SURFACE	6.0317E-10	6.0310E-10	0.01
STOMACH	8.1543E-10	8.1540E-10	0.00
S.I.	2.0812E-09	2.0810E-09	0.01
U.L.I.	5.2915E-09	5.2910E-09	0.01
L.L.I.	1.2527E-08	1.2530E-08	-0.02
SKIN	1.8752E-10	1.8750E-10	0.01
SPLEEN	3.3258E-10	3.3260E-10	-0.01
THYMUS	1.5900E-10	1.5900E-10	0.00
UTERUS	8.9574E-10	8.9570E-10	0.00
ET	1.4631E-10	1.4630E-10	0.01
LUNG	2.1560E-10	2.1580E-10	-0.09
COLON	8.4202E-09	8.4170E-09	0.04
ET1	1.4631E-10	1.4630E-10	0.01
ET2	1.4631E-10	1.4630E-10	0.01
LN(ET)	1.4631E-10	1.4630E-10	0.01
BBsec	2.1560E-10	2.1560E-10	0.00
BBbas	2.1560E-10	2.1560E-10	0.00
bb	2.1560E-10	2.1560E-10	0.00
AI	2.1560E-10	2.1560E-10	0.00
LN(TH)	2.1560E-10	2.1560E-10	0.00
ESOPHAGUS	1.5900E-10	1.5900E-10	0.00
REMAINDER	**3.8611E-10**	**3.8620E-10**	**-0.02**
C.E.D.	**1.7237E-09**	**1.7230E-09**	**0.04**
Maximum			**-0.09**

C.10.51. ^{95}Nb – Niobium-95

Maximum difference in ***Effective Dose***: **-0.19%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.27%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.06%**.

C.10.51.1. Acute Inhalation (Type M: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.2635E-10	3.2640E-10	-0.02
URIN BLADDER	1.5705E-10	1.5710E-10	-0.03
BRAIN	8.2407E-11	8.2410E-11	0.00
BREAST	2.5433E-10	2.5440E-10	-0.03
GALL BLADDER	2.8209E-10	N/A	N/A
HEART	4.2456E-10	N/A	N/A
KIDNEYS	3.1803E-10	3.1810E-10	-0.02
LIVER	4.8519E-10	4.8520E-10	0.00
MUSCLE	1.8881E-10	1.8880E-10	0.01
OVARIES	4.0188E-10	4.0190E-10	0.00
PANCREAS	2.6974E-10	2.6980E-10	-0.02
TESTES	6.9874E-11	6.9870E-11	0.01
THYROID	1.4844E-10	1.4840E-10	0.03
R.B.M.	3.2381E-10	3.2380E-10	0.00
BONE SURFACE	7.2469E-10	7.2480E-10	-0.02
STOMACH	2.6702E-10	2.6700E-10	0.01
S.I.	4.1692E-10	4.1690E-10	0.00
U.L.I.	8.3347E-10	8.3350E-10	0.00
L.L.I.	1.7058E-09	1.7060E-09	-0.01
SKIN	1.0078E-10	1.0080E-10	-0.02
SPLEEN	2.2919E-10	2.2920E-10	0.00
THYMUS	3.1342E-10	3.1350E-10	-0.03
UTERUS	2.0939E-10	2.0940E-10	0.00
ET	7.5242E-09	7.5240E-09	0.00
LUNG	6.5177E-09	6.5350E-09	-0.26
COLON	1.2107E-09	1.2100E-09	0.06
ET1	4.2431E-07	4.2430E-07	0.00
ET2	7.1080E-09	7.1080E-09	0.00
LN(ET)	6.1238E-09	6.1240E-09	0.00
BBsec	1.6557E-08	1.6590E-08	-0.20
BBbas	8.3950E-09	8.4110E-09	-0.19
bb	5.1581E-09	5.1490E-09	0.18
AI	1.9355E-09	1.9360E-09	-0.03
LN(TH)	1.0684E-09	1.0690E-09	-0.06
ESOPHAGUS	3.1342E-10	3.1350E-10	-0.03
REMAINDER	**3.8575E-09**	**3.8570E-09**	**0.01**
C.E.D.	**1.3477E-09**	**1.3500E-09**	**-0.17**
Maximum			**-0.26**

C.10.51.2. Acute Inhalation (Type S: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.8928E-10	2.8930E-10	-0.01
URIN BLADDER	1.1726E-10	1.1730E-10	-0.03
BRAIN	4.7673E-11	4.7670E-11	0.01
BREAST	2.8809E-10	2.8810E-10	0.00
GALL BLADDER	1.9886E-10	N/A	N/A
HEART	4.8156E-10	N/A	N/A
KIDNEYS	1.5928E-10	1.5930E-10	-0.01
LIVER	2.8134E-10	2.8140E-10	-0.02
MUSCLE	1.7177E-10	1.7180E-10	-0.02
OVARIES	3.6580E-10	3.6580E-10	0.00
PANCREAS	2.3691E-10	2.3690E-10	0.00
TESTES	4.0618E-11	4.0620E-11	0.00
THYROID	1.3428E-10	1.3430E-10	-0.01
R.B.M.	2.2986E-10	2.2990E-10	-0.02
BONE SURFACE	2.1627E-10	2.1630E-10	-0.01
STOMACH	2.5525E-10	2.5530E-10	-0.02
S.I.	3.8118E-10	3.8120E-10	-0.01
U.L.I.	8.1907E-10	8.1910E-10	0.00
L.L.I.	1.7403E-09	1.7400E-09	0.02
SKIN	8.4272E-11	8.4280E-11	-0.01
SPLEEN	2.2305E-10	2.2310E-10	-0.02
THYMUS	3.4995E-10	3.5000E-10	-0.01
UTERUS	1.6940E-10	1.6940E-10	0.00
ET	7.8954E-09	7.8950E-09	0.01
LUNG	8.0311E-09	8.0530E-09	-0.27
COLON	1.2174E-09	1.2170E-09	0.03
ET1	4.2435E-07	4.2430E-07	0.01
ET2	7.4799E-09	7.4800E-09	0.00
LN(ET)	6.1707E-09	6.1700E-09	0.01
BBsec	2.0215E-08	2.0260E-08	-0.22
BBbas	1.0292E-08	1.0310E-08	-0.17
bb	6.3467E-09	6.3350E-09	0.18
AI	2.5134E-09	2.5140E-09	-0.02
LN(TH)	1.3570E-09	1.3570E-09	0.00
ESOPHAGUS	3.4995E-10	3.5000E-10	-0.01
REMAINDER	**1.7479E-10**	**1.7470E-10**	**0.05**
C.E.D.	**1.3115E-09**	**1.3140E-09**	**-0.19**
Maximum			**-0.27**

C.10.51.3. Acute Ingestion (f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.5735E-11	7.5730E-11	0.01
URIN BLADDER	2.5677E-10	2.5680E-10	-0.01
BRAIN	1.1086E-11	1.1090E-11	-0.04
BREAST	1.9931E-11	1.9930E-11	0.01
GALL BLADDER	2.5242E-10	N/A	N/A
HEART	3.7735E-11	N/A	N/A
KIDNEYS	1.5666E-10	1.5670E-10	-0.03
LIVER	1.4344E-10	1.4340E-10	0.03
MUSCLE	1.0485E-10	1.0480E-10	0.05
OVARIES	8.1350E-10	8.1350E-10	0.00
PANCREAS	1.1773E-10	1.1770E-10	0.03
TESTES	8.7484E-11	8.7480E-11	0.00
THYROID	1.2921E-11	1.2920E-11	0.01
R.B.M.	1.8267E-10	1.8270E-10	-0.02
BONE SURFACE	2.0917E-10	2.0920E-10	-0.01
STOMACH	2.8255E-10	2.8250E-10	0.02
S.I.	8.1825E-10	8.1830E-10	-0.01
U.L.I.	1.8232E-09	1.8230E-09	0.01
L.L.I.	4.0006E-09	4.0010E-09	-0.01
SKIN	4.3069E-11	4.3070E-11	0.00
SPLEEN	8.8612E-11	8.8610E-11	0.00
THYMUS	1.9349E-11	1.9350E-11	-0.01
UTERUS	3.6492E-10	3.6490E-10	0.01
ET	1.2921E-11	1.2920E-11	0.01
LUNG	3.0173E-11	3.0200E-11	-0.09
COLON	2.7648E-09	2.7640E-09	0.03
ET1	1.2921E-11	1.2920E-11	0.01
ET2	1.2921E-11	1.2920E-11	0.01
LN(ET)	1.2921E-11	1.2920E-11	0.01
BBsec	3.0173E-11	3.0170E-11	0.01
BBbas	3.0173E-11	3.0170E-11	0.01
bb	3.0173E-11	3.0170E-11	0.01
AI	3.0173E-11	3.0170E-11	0.01
LN(TH)	3.0173E-11	3.0170E-11	0.01
ESOPHAGUS	1.9349E-11	1.9350E-11	-0.01
REMAINDER	**1.1646E-10**	**1.1650E-10**	**-0.03**
C.E.D.	**5.8489E-10**	**5.8480E-10**	**0.02**
Maximum			**-0.09**

C.10.52. ^{63}Ni – Nickel-63

Maximum difference in ***Effective Dose***: **+0.14%** (Inhalation – type "F").
Maximum difference in ***Organ Dose***: **+0.17%** (Ingestion – Stomach).
Maximum difference excluding ***Respiratory Tract***: **+0.17%**.

C.10.52.1. Acute Inhalation (Type F: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.0672E-10	5.0600E-10	0.14
URIN BLADDER	5.2930E-10	5.2860E-10	0.13
BRAIN	5.0672E-10	5.0600E-10	0.14
BREAST	5.0672E-10	5.0600E-10	0.14
GALL BLADDER	5.0672E-10	N/A	N/A
HEART	5.0672E-10	N/A	N/A
KIDNEYS	5.0519E-10	5.0520E-10	0.00
LIVER	5.0672E-10	5.0600E-10	0.14
MUSCLE	5.0672E-10	5.0600E-10	0.14
OVARIES	5.0672E-10	5.0600E-10	0.14
PANCREAS	5.0672E-10	5.0600E-10	0.14
TESTES	5.0672E-10	5.0600E-10	0.14
THYROID	5.0672E-10	5.0600E-10	0.14
R.B.M.	5.0672E-10	5.0600E-10	0.14
BONE SURFACE	5.0672E-10	5.0600E-10	0.14
STOMACH	5.1067E-10	5.0990E-10	0.15
S.I.	5.1609E-10	5.1530E-10	0.15
U.L.I.	5.6755E-10	5.6680E-10	0.13
L.L.I.	6.8520E-10	6.8450E-10	0.10
SKIN	5.0672E-10	5.0600E-10	0.14
SPLEEN	5.0672E-10	5.0600E-10	0.14
THYMUS	5.0672E-10	5.0600E-10	0.14
UTERUS	5.0672E-10	5.0600E-10	0.14
ET	5.0732E-10	5.0660E-10	0.14
LUNG	5.0729E-10	5.0700E-10	0.06
COLON	6.1843E-10	6.1760E-10	0.13
ET1	1.0269E-09	1.0260E-09	0.09
ET2	5.0680E-10	5.0600E-10	0.16
LN(ET)	5.0672E-10	5.0600E-10	0.14
BBsec	5.0762E-10	5.0690E-10	0.14
BBbas	5.0674E-10	5.0600E-10	0.15
bb	5.0785E-10	5.0710E-10	0.15
AI	5.0683E-10	5.0610E-10	0.14
LN(TH)	5.0672E-10	5.0600E-10	0.14
ESOPHAGUS	5.0672E-10	5.0600E-10	0.14
REMAINDER	**5.0690E-10**	**5.0620E-10**	**0.14**
C.E.D.	**5.2181E-10**	**5.2110E-10**	**0.14**
Maximum			**0.16**

C.10.52.2. Acute Inhalation (Type M: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.4320E-10	1.4300E-10	0.14
URIN BLADDER	1.4959E-10	1.4940E-10	0.13
BRAIN	1.4320E-10	1.4300E-10	0.14
BREAST	1.4320E-10	1.4300E-10	0.14
GALL BLADDER	1.4320E-10	N/A	N/A
HEART	1.4320E-10	N/A	N/A
KIDNEYS	1.4276E-10	1.4280E-10	-0.03
LIVER	1.4320E-10	1.4300E-10	0.14
MUSCLE	1.4320E-10	1.4300E-10	0.14
OVARIES	1.4320E-10	1.4300E-10	0.14
PANCREAS	1.4320E-10	1.4300E-10	0.14
TESTES	1.4320E-10	1.4300E-10	0.14
THYROID	1.4320E-10	1.4300E-10	0.14
R.B.M.	1.4320E-10	1.4300E-10	0.14
BONE SURFACE	1.4320E-10	1.4300E-10	0.14
STOMACH	1.5149E-10	1.5130E-10	0.13
S.I.	1.6287E-10	1.6270E-10	0.10
U.L.I.	2.6342E-10	2.6320E-10	0.08
L.L.I.	4.9591E-10	4.9570E-10	0.04
SKIN	1.4320E-10	1.4300E-10	0.14
SPLEEN	1.4320E-10	1.4300E-10	0.14
THYMUS	1.4320E-10	1.4300E-10	0.14
UTERUS	1.4320E-10	1.4300E-10	0.14
ET	8.9725E-10	8.9720E-10	0.01
LUNG	1.3378E-09	1.3380E-09	-0.01
COLON	3.6396E-10	3.6370E-10	0.07
ET1	6.6335E-10	6.6310E-10	0.04
ET2	8.9815E-10	8.9810E-10	0.01
LN(ET)	2.3755E-10	2.3740E-10	0.06
BBsec	1.4670E-09	1.4700E-09	-0.20
BBbas	2.4863E-10	2.4860E-10	0.01
bb	1.6535E-09	1.6500E-09	0.21
AI	1.5051E-09	1.5050E-09	0.01
LN(TH)	3.6361E-10	3.6350E-10	0.03
ESOPHAGUS	1.4320E-10	1.4300E-10	0.14
REMAINDER	**1.4397E-10**	**1.4380E-10**	**0.12**
C.E.D.	**3.1440E-10**	**3.1420E-10**	**0.06**
Maximum			**0.21**

C.10.52.3. Acute Ingestion (f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.7043E-11	8.6900E-11	0.16
URIN BLADDER	9.0923E-11	9.0780E-11	0.16
BRAIN	8.7043E-11	8.6900E-11	0.16
BREAST	8.7043E-11	8.6900E-11	0.16
GALL BLADDER	8.7043E-11	N/A	N/A
HEART	8.7043E-11	N/A	N/A
KIDNEYS	8.6776E-11	8.6780E-11	0.00
LIVER	8.7043E-11	8.6900E-11	0.16
MUSCLE	8.7043E-11	8.6900E-11	0.16
OVARIES	8.7043E-11	8.6900E-11	0.16
PANCREAS	8.7043E-11	8.6900E-11	0.16
TESTES	8.7043E-11	8.6900E-11	0.16
THYROID	8.7043E-11	8.6900E-11	0.16
R.B.M.	8.7043E-11	8.6900E-11	0.16
BONE SURFACE	8.7043E-11	8.6900E-11	0.16
STOMACH	1.0678E-10	1.0660E-10	0.17
S.I.	1.3391E-10	1.3380E-10	0.08
U.L.I.	3.7145E-10	3.7130E-10	0.04
L.L.I.	9.2146E-10	9.2130E-10	0.02
SKIN	8.7043E-11	8.6900E-11	0.16
SPLEEN	8.7043E-11	8.6900E-11	0.16
THYMUS	8.7043E-11	8.6900E-11	0.16
UTERUS	8.7043E-11	8.6900E-11	0.16
ET	8.7043E-11	8.6900E-11	0.16
LUNG	8.7043E-11	8.6990E-11	0.06

COLON	6.0929E-10	6.0890E-10	0.06	AI	8.7043E-11	8.6900E-11	0.16
ET1	8.7043E-11	8.6900E-11	0.16	LN(TH)	8.7043E-11	8.6900E-11	0.16
ET2	8.7043E-11	8.6900E-11	0.16	ESOPHAGUS	8.7043E-11	8.6900E-11	0.16
LN(ET)	8.7043E-11	8.6900E-11	0.16	**REMAINDER**	**8.8015E-11**	**8.7880E-11**	**0.15**
BBsec	8.7043E-11	8.6900E-11	0.16	**C.E.D.**	**1.5232E-10**	**1.5220E-10**	**0.08**
BBbas	8.7043E-11	8.6900E-11	0.16	**Maximum**			**0.17**
bb	8.7043E-11	8.6900E-11	0.16				

C.10.53. ^{237}Np – Neptunium-237

Maximum difference in ***Effective Dose***: **-0.02%** (Ingestion).
Maximum difference in ***Organ Dose***: **+0.16%** (Ingestion – Numerous).
Maximum difference excluding ***Respiratory Tract***: **+0.16%**.

C.10.53.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.6593E-07	8.6470E-07	0.14
URIN BLADDER	8.6068E-07	8.5940E-07	0.15
BRAIN	8.6345E-07	8.6220E-07	0.14
BREAST	8.5990E-07	8.5860E-07	0.15
GALL BLADDER	8.6269E-07	N/A	N/A
HEART	8.6201E-07	N/A	N/A
KIDNEYS	2.3434E-06	2.3440E-06	-0.03
LIVER	1.0467E-05	1.0470E-05	-0.03
MUSCLE	8.6196E-07	8.6070E-07	0.15
OVARIES	8.7453E-06	8.7450E-06	0.00
PANCREAS	8.6301E-07	8.6170E-07	0.15
TESTES	8.9063E-06	8.9070E-06	-0.01
THYROID	8.6177E-07	8.6050E-07	0.15
R.B.M.	2.5483E-05	2.5490E-05	-0.03
BONE SURFACE	6.6745E-04	6.6760E-04	-0.02
STOMACH	8.6117E-07	8.5990E-07	0.15
S.I.	8.6362E-07	8.6240E-07	0.14
U.L.I.	8.6949E-07	8.6820E-07	0.15
L.L.I.	8.8557E-07	8.8430E-07	0.14
SKIN	8.6024E-07	8.5900E-07	0.14
SPLEEN	8.6116E-07	8.5990E-07	0.15
THYMUS	8.6103E-07	8.5980E-07	0.14
UTERUS	8.6158E-07	8.6030E-07	0.15
ET	1.3288E-05	1.3290E-05	-0.02
LUNG	1.7161E-05	1.7180E-05	-0.11
COLON	8.7644E-07	8.7520E-07	0.14
ET1	1.1422E-06	1.1410E-06	0.11
ET2	1.3312E-05	1.3310E-05	0.02
LN(ET)	1.3912E-06	1.3900E-06	0.09
BBsec	3.9067E-05	3.9150E-05	-0.21
BBbas	3.6941E-06	3.6990E-06	-0.13
bb	2.1716E-05	2.1670E-05	0.21
AI	8.4274E-06	8.4270E-06	0.00
LN(TH)	3.3210E-06	3.3210E-06	0.00
ESOPHAGUS	8.6103E-07	8.5980E-07	0.14
REMAINDER	**8.8305E-07**	**8.8180E-07**	**0.14**
C.E.D.	**1.4530E-05**	**1.4530E-05**	**0.00**
Maximum			**0.21**

C.10.53.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.0620E-09	7.0510E-09	0.16
URIN BLADDER	7.0336E-09	7.0230E-09	0.15
BRAIN	7.0416E-09	7.0310E-09	0.15
BREAST	7.0114E-09	7.0000E-09	0.16
GALL BLADDER	7.0478E-09	N/A	N/A
HEART	7.0276E-09	N/A	N/A
KIDNEYS	1.9045E-08	1.9050E-08	-0.03
LIVER	8.5054E-08	8.5060E-08	-0.01
MUSCLE	7.0339E-09	7.0230E-09	0.16
OVARIES	7.1179E-08	7.1170E-08	0.01
PANCREAS	7.0412E-09	7.0300E-09	0.16
TESTES	7.2430E-08	7.2430E-08	0.00
THYROID	7.0274E-09	7.0160E-09	0.16
R.B.M.	2.0709E-07	2.0710E-07	0.00
BONE SURFACE	5.4300E-06	5.4310E-06	-0.02
STOMACH	8.2128E-09	8.2020E-09	0.13
S.I.	1.0036E-08	1.0030E-08	0.06
U.L.I.	2.5051E-08	2.5040E-08	0.04
L.L.I.	6.0069E-08	6.0060E-08	0.01
SKIN	7.0165E-09	7.0060E-09	0.15
SPLEEN	7.0253E-09	7.0140E-09	0.16
THYMUS	7.0202E-09	7.0090E-09	0.16
UTERUS	7.0460E-09	7.0350E-09	0.16
ET	7.0274E-09	7.0160E-09	0.16
LUNG	7.0310E-09	7.0270E-09	0.06
COLON	4.0194E-08	4.0170E-08	0.06
ET1	7.0274E-09	7.0160E-09	0.16
ET2	7.0274E-09	7.0160E-09	0.16
LN(ET)	7.0274E-09	7.0160E-09	0.16
BBsec	7.0310E-09	7.0200E-09	0.16
BBbas	7.0310E-09	7.0200E-09	0.16
bb	7.0310E-09	7.0200E-09	0.16
AI	7.0310E-09	7.0200E-09	0.16
LN(TH)	7.0310E-09	7.0200E-09	0.16
ESOPHAGUS	7.0202E-09	7.0090E-09	0.16
REMAINDER	**7.2178E-09**	**7.2070E-09**	**0.15**
C.E.D.	**1.0638E-07**	**1.0640E-07**	**-0.02**
Maximum			**0.16**

C.10.54. ^{239}Np – Neptunium-239

Maximum difference in ***Effective Dose***: **-0.19%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.37%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.21%**.

C.10.54.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.2389E-11	1.2390E-11	-0.01
URIN BLADDER	3.0518E-11	3.0520E-11	-0.01
BRAIN	6.9907E-12	6.9900E-12	0.01
BREAST	8.7547E-12	8.7550E-12	0.00
GALL BLADDER	2.5084E-11	N/A	N/A
HEART	1.4933E-11	N/A	N/A
KIDNEYS	2.9230E-11	2.9240E-11	-0.03
LIVER	3.1804E-11	3.1810E-11	-0.02
MUSCLE	1.5113E-11	1.5110E-11	0.02
OVARIES	6.5804E-11	6.5820E-11	-0.02
PANCREAS	1.4936E-11	1.4940E-11	-0.03
TESTES	1.1225E-11	1.1240E-11	-0.13
THYROID	8.7114E-12	8.7110E-12	0.00
R.B.M.	4.7759E-11	4.7780E-11	-0.04
BONE SURFACE	4.3736E-10	4.3830E-10	-0.21
STOMACH	1.4131E-10	1.4130E-10	0.01
S.I.	3.3860E-10	3.3860E-10	0.00
U.L.I.	1.5501E-09	1.5500E-09	0.01
L.L.I.	3.4318E-09	3.4320E-09	-0.01
SKIN	6.5885E-12	6.5890E-12	-0.01
SPLEEN	1.2462E-11	1.2460E-11	0.02
THYMUS	1.3843E-11	1.3840E-11	0.02
UTERUS	3.0567E-11	3.0570E-11	-0.01
ET	5.4732E-09	5.4730E-09	0.00
LUNG	5.1162E-09	5.1350E-09	-0.37
COLON	2.3638E-09	2.3630E-09	0.03
ET1	2.3411E-06	2.3410E-06	0.00
ET2	3.1366E-09	3.1370E-09	-0.01
LN(ET)	1.7854E-09	1.7850E-09	0.02
BBsec	1.4160E-08	1.4190E-08	-0.21
BBbas	1.0024E-08	1.0040E-08	-0.16
bb	2.7149E-09	2.7090E-09	0.22
AI	5.5712E-10	5.5720E-10	-0.01
LN(TH)	4.7191E-11	4.7200E-11	-0.02
ESOPHAGUS	1.3843E-11	1.3840E-11	0.02
REMAINDER	**2.7474E-09**	**2.7470E-09**	**0.01**
C.E.D.	**1.0799E-09**	**1.0820E-09**	**-0.19**
Maximum			**-0.37**

C.10.54.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.9721E-12	8.9720E-12	0.00
URIN BLADDER	4.6293E-11	4.6290E-11	0.01
BRAIN	5.3152E-14	5.3140E-14	0.02
BREAST	1.1408E-12	1.1410E-12	-0.02
GALL BLADDER	5.0361E-11	N/A	N/A
HEART	3.4724E-12	N/A	N/A
KIDNEYS	2.0813E-11	2.0810E-11	0.01
LIVER	1.3680E-11	1.3680E-11	0.00
MUSCLE	1.6561E-11	1.6560E-11	0.01
OVARIES	1.4834E-10	1.4840E-10	-0.04
PANCREAS	1.9658E-11	1.9660E-11	-0.01
TESTES	1.1695E-11	1.1700E-11	-0.04
THYROID	1.5469E-13	1.5470E-13	-0.01
R.B.M.	2.5889E-11	2.5890E-11	0.00
BONE SURFACE	2.4931E-11	2.4940E-11	-0.04
STOMACH	3.4425E-10	3.4420E-10	0.01
S.I.	8.4909E-10	8.4910E-10	0.00
U.L.I.	3.9164E-09	3.9160E-09	0.01
L.L.I.	8.6816E-09	8.6820E-09	0.00
SKIN	4.9709E-12	4.9710E-12	0.00
SPLEEN	1.4922E-11	1.4920E-11	0.01
THYMUS	8.3463E-13	8.3460E-13	0.00
UTERUS	6.9507E-11	6.9510E-11	0.00
ET	1.5469E-13	1.5470E-13	-0.01
LUNG	2.1231E-12	2.1250E-12	-0.09
COLON	5.9770E-09	5.9750E-09	0.03
ET1	1.5469E-13	1.5470E-13	-0.01
ET2	1.5469E-13	1.5470E-13	-0.01
LN(ET)	1.5469E-13	1.5470E-13	-0.01
BBsec	2.1231E-12	2.1230E-12	0.00
BBbas	2.1231E-12	2.1230E-12	0.00
bb	2.1231E-12	2.1230E-12	0.00
AI	2.1231E-12	2.1230E-12	0.00
LN(TH)	2.1231E-12	2.1230E-12	0.00
ESOPHAGUS	8.3463E-13	8.3460E-13	0.00
REMAINDER	**3.3291E-11**	**3.3310E-11**	**-0.06**
C.E.D.	**7.9665E-10**	**7.9640E-10**	**0.03**
Maximum			**-0.09**

C.10.55. ^{32}P – Phosphorus-32

Maximum difference in ***Effective Dose***: **-0.17%** (Inhalation – type “M”).
Maximum difference in ***Organ Dose***: **-0.31%** (Inhalation – type “M” – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.15%**.

C.10.55.1. Acute Inhalation (Type F: f_1 = 0.8)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.7078E-10	3.7030E-10	0.13
URIN BLADDER	9.5131E-10	9.5080E-10	0.05
BRAIN	3.7078E-10	3.7030E-10	0.13
BREAST	3.7078E-10	3.7030E-10	0.13
GALL BLADDER	3.7078E-10	N/A	N/A
HEART	3.7078E-10	N/A	N/A
KIDNEYS	3.7078E-10	3.7030E-10	0.13
LIVER	3.7078E-10	3.7030E-10	0.13
MUSCLE	3.7078E-10	3.7030E-10	0.13
OVARIES	3.7078E-10	3.7030E-10	0.13
PANCREAS	3.7078E-10	3.7030E-10	0.13
TESTES	3.7078E-10	3.7030E-10	0.13
THYROID	3.7078E-10	3.7030E-10	0.13
R.B.M.	4.5389E-09	4.5380E-09	0.02
BONE SURFACE	4.5389E-09	4.5380E-09	0.02
STOMACH	5.3046E-10	5.3000E-10	0.09
S.I.	4.5049E-10	4.5000E-10	0.11
U.L.I.	1.0695E-09	1.0690E-09	0.05
L.L.I.	2.3260E-09	2.3260E-09	0.00
SKIN	3.7078E-10	3.7030E-10	0.13
SPLEEN	3.7078E-10	3.7030E-10	0.13
THYMUS	3.7078E-10	3.7030E-10	0.13
UTERUS	3.7078E-10	3.7030E-10	0.13
ET	2.4854E-09	2.4850E-09	0.02
LUNG	3.9724E-10	3.9720E-10	0.01
COLON	1.6129E-09	1.6120E-09	0.06
ET1	1.7720E-06	1.7720E-06	0.00
ET2	7.1444E-10	7.1400E-10	0.06
LN(ET)	3.7078E-10	3.7030E-10	0.13
BBsec	4.3924E-10	4.3890E-10	0.08
BBbas	4.3312E-10	4.3280E-10	0.07
bb	3.8019E-10	3.7970E-10	0.13
AI	3.7543E-10	3.7490E-10	0.14
LN(TH)	3.7078E-10	3.7030E-10	0.13
ESOPHAGUS	3.7078E-10	3.7030E-10	0.13
REMAINDER	**3.7347E-10**	**3.7300E-10**	**0.13**
C.E.D.	**1.1132E-09**	**1.1130E-09**	**0.02**
Maximum			**0.14**

C.10.55.2. Acute Inhalation (Type M: f_1 = 0.8)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.9784E-10	2.9740E-10	0.15
URIN BLADDER	7.6417E-10	7.6380E-10	0.05
BRAIN	2.9784E-10	2.9740E-10	0.15
BREAST	2.9784E-10	2.9740E-10	0.15
GALL BLADDER	2.9784E-10	N/A	N/A
HEART	2.9784E-10	N/A	N/A
KIDNEYS	2.9784E-10	2.9740E-10	0.15
LIVER	2.9784E-10	2.9740E-10	0.15
MUSCLE	2.9784E-10	2.9740E-10	0.15
OVARIES	2.9784E-10	2.9740E-10	0.15
PANCREAS	2.9784E-10	2.9740E-10	0.15
TESTES	2.9784E-10	2.9740E-10	0.15
THYROID	2.9784E-10	2.9740E-10	0.15
R.B.M.	3.6459E-09	3.6450E-09	0.02
BONE SURFACE	3.6459E-09	3.6450E-09	0.02
STOMACH	6.1942E-10	6.1900E-10	0.07
S.I.	4.5837E-10	4.5800E-10	0.08
U.L.I.	1.4280E-09	1.4280E-09	0.00
L.L.I.	3.4601E-09	3.4600E-09	0.00
SKIN	2.9784E-10	2.9740E-10	0.15
SPLEEN	2.9784E-10	2.9740E-10	0.15
THYMUS	2.9784E-10	2.9740E-10	0.15
UTERUS	2.9784E-10	2.9740E-10	0.15
ET	3.6351E-09	3.6350E-09	0.00
LUNG	1.5572E-08	1.5620E-08	-0.31
COLON	2.3067E-09	2.3060E-09	0.03
ET1	1.7719E-06	1.7720E-06	-0.01
ET2	1.8666E-09	1.8660E-09	0.03
LN(ET)	3.3738E-10	3.3700E-10	0.11
BBsec	3.0885E-08	3.0940E-08	-0.18
BBbas	2.8700E-08	2.8750E-08	-0.17
bb	9.5624E-09	9.5570E-09	0.06
AI	7.4064E-09	7.4060E-09	0.01
LN(TH)	4.7989E-10	4.7950E-10	0.08
ESOPHAGUS	2.9784E-10	2.9740E-10	0.15
REMAINDER	**3.0281E-10**	**3.0240E-10**	**0.14**
C.E.D.	**2.8692E-09**	**2.8740E-09**	**-0.17**
Maximum			**-0.31**

C.10.55.3. Acute Ingestion (f_1 = 0.8)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.7112E-10	6.7020E-10	0.14
URIN BLADDER	1.7219E-09	1.7210E-09	0.05
BRAIN	6.7112E-10	6.7020E-10	0.14
BREAST	6.7112E-10	6.7020E-10	0.14
GALL BLADDER	6.7112E-10	N/A	N/A
HEART	6.7112E-10	N/A	N/A
KIDNEYS	6.7112E-10	6.7020E-10	0.14
LIVER	6.7112E-10	6.7020E-10	0.14
MUSCLE	6.7112E-10	6.7020E-10	0.14
OVARIES	6.7112E-10	6.7020E-10	0.14
PANCREAS	6.7112E-10	6.7020E-10	0.14
TESTES	6.7112E-10	6.7020E-10	0.14
THYROID	6.7112E-10	6.7020E-10	0.14
R.B.M.	8.2157E-09	8.2140E-09	0.02
BONE SURFACE	8.2157E-09	8.2140E-09	0.02
STOMACH	1.4698E-09	1.4690E-09	0.05
S.I.	1.0698E-09	1.0690E-09	0.07
U.L.I.	3.4355E-09	3.4350E-09	0.01
L.L.I.	8.4065E-09	8.4050E-09	0.02
SKIN	6.7112E-10	6.7020E-10	0.14
SPLEEN	6.7112E-10	6.7020E-10	0.14
THYMUS	6.7112E-10	6.7020E-10	0.14
UTERUS	6.7112E-10	6.7020E-10	0.14
ET	6.7112E-10	6.7020E-10	0.14
LUNG	6.7112E-10	6.7090E-10	0.03
COLON	5.5851E-09	5.5820E-09	0.06
ET1	6.7112E-10	6.7020E-10	0.14
ET2	6.7112E-10	6.7020E-10	0.14
LN(ET)	6.7112E-10	6.7020E-10	0.14
BBsec	6.7112E-10	6.7020E-10	0.14
BBbas	6.7112E-10	6.7020E-10	0.14
bb	6.7112E-10	6.7020E-10	0.14
AI	6.7112E-10	6.7020E-10	0.14
LN(TH)	6.7112E-10	6.7020E-10	0.14
ESOPHAGUS	6.7112E-10	6.7020E-10	0.14
REMAINDER	**6.7942E-10**	**6.7850E-10**	**0.14**
C.E.D.	**2.3904E-09**	**2.3890E-09**	**0.06**
Maximum			**0.14**

C.10.56. ^{33}P – Phosphorus-33

Maximum difference in ***Effective Dose***: **+0.32%** (Ingestion).
Maximum difference in ***Organ Dose***: **+0.64%** (Inhalation – type "M" – LN_{TH}).
Maximum difference excluding ***Respiratory Tract***: **+0.60%**.

C.10.56.1. Acute Inhalation (Type F: $f_1 = 0.8$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.3114E-11	5.2920E-11	0.37
URIN BLADDER	1.2788E-10	1.2760E-10	0.22
BRAIN	5.3114E-11	5.2920E-11	0.37
BREAST	5.3114E-11	5.2920E-11	0.37
GALL BLADDER	5.3114E-11	N/A	N/A
HEART	5.3114E-11	N/A	N/A
KIDNEYS	5.3114E-11	5.2920E-11	0.37
LIVER	5.3114E-11	5.2920E-11	0.37
MUSCLE	5.3114E-11	5.2920E-11	0.37
OVARIES	5.3114E-11	5.2920E-11	0.37
PANCREAS	5.3114E-11	5.2920E-11	0.37
TESTES	5.3114E-11	5.2920E-11	0.37
THYROID	5.3114E-11	5.2920E-11	0.37
R.B.M.	2.8502E-10	2.8350E-10	0.54
BONE SURFACE	7.5776E-10	7.5350E-10	0.57
STOMACH	7.0739E-11	7.0550E-11	0.27
S.I.	6.1918E-11	6.1730E-11	0.30
U.L.I.	1.3539E-10	1.3520E-10	0.14
L.L.I.	2.8812E-10	2.8780E-10	0.11
SKIN	5.3114E-11	5.2920E-11	0.37
SPLEEN	5.3114E-11	5.2920E-11	0.37
THYMUS	5.3114E-11	5.2920E-11	0.37
UTERUS	5.3114E-11	5.2920E-11	0.37
ET	1.2919E-09	1.2910E-09	0.07
LUNG	6.9140E-11	6.9060E-11	0.12
COLON	2.0144E-10	2.0110E-10	0.17
ET1	1.0549E-06	1.0550E-06	-0.01
ET2	2.3739E-10	2.3720E-10	0.08
LN(ET)	5.3114E-11	5.2920E-11	0.37
BBsec	1.0227E-10	1.0220E-10	0.07
BBbas	8.4672E-11	8.4550E-11	0.14
bb	6.0369E-11	6.0160E-11	0.35
AI	5.3628E-11	5.3440E-11	0.35
LN(TH)	5.3114E-11	5.2920E-11	0.37
ESOPHAGUS	5.3114E-11	5.2920E-11	0.37
REMAINDER	**6.7260E-10**	**6.7230E-10**	**0.04**
C.E.D.	**1.4454E-10**	**1.4410E-10**	**0.31**
Maximum			**0.57**

C.10.56.2. Acute Inhalation (Type M: $f_1 = 0.8$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.3330E-11	4.3170E-11	0.37
URIN BLADDER	1.0433E-10	1.0410E-10	0.22
BRAIN	4.3330E-11	4.3170E-11	0.37
BREAST	4.3330E-11	4.3170E-11	0.37
GALL BLADDER	4.3330E-11	N/A	N/A
HEART	4.3330E-11	N/A	N/A
KIDNEYS	4.3330E-11	4.3170E-11	0.37
LIVER	4.3330E-11	4.3170E-11	0.37
MUSCLE	4.3330E-11	4.3170E-11	0.37
OVARIES	4.3330E-11	4.3170E-11	0.37
PANCREAS	4.3330E-11	4.3170E-11	0.37
TESTES	4.3330E-11	4.3170E-11	0.37
THYROID	4.3330E-11	4.3170E-11	0.37
R.B.M.	2.3251E-10	2.3120E-10	0.57
BONE SURFACE	6.1816E-10	6.1450E-10	0.60
STOMACH	7.9110E-11	7.8940E-11	0.22
S.I.	6.1203E-11	6.1040E-11	0.27
U.L.I.	1.7421E-10	1.7400E-10	0.12
L.L.I.	4.1717E-10	4.1680E-10	0.09
SKIN	4.3330E-11	4.3170E-11	0.37
SPLEEN	4.3330E-11	4.3170E-11	0.37
THYMUS	4.3330E-11	4.3170E-11	0.37
UTERUS	4.3330E-11	4.3170E-11	0.37
ET	2.4797E-09	2.4750E-09	0.19
LUNG	9.5998E-09	9.6080E-09	-0.09
COLON	2.7927E-10	2.7890E-10	0.13
ET1	1.0549E-06	1.0550E-06	-0.01
ET2	1.4276E-09	1.4230E-09	0.32
LN(ET)	5.5301E-11	5.5020E-11	0.51
BBsec	2.7122E-08	2.7110E-08	0.04
BBbas	1.7498E-08	1.7490E-08	0.05
bb	5.2244E-09	5.1990E-09	0.49
AI	1.2932E-09	1.2880E-09	0.40
LN(TH)	9.4144E-11	9.3550E-11	0.63
ESOPHAGUS	4.3330E-11	4.3170E-11	0.37
REMAINDER	**4.4890E-11**	**4.4720E-11**	**0.38**
C.E.D.	**1.2543E-09**	**1.2550E-09**	**-0.06**
Maximum			**0.64**

C.10.56.3. Acute Ingestion ($f_1 = 0.8$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.6224E-11	9.5870E-11	0.37
URIN BLADDER	2.3169E-10	2.3110E-10	0.26
BRAIN	9.6224E-11	9.5870E-11	0.37
BREAST	9.6224E-11	9.5870E-11	0.37
GALL BLADDER	9.6224E-11	N/A	N/A
HEART	9.6224E-11	N/A	N/A
KIDNEYS	9.6224E-11	9.5870E-11	0.37
LIVER	9.6224E-11	9.5870E-11	0.37
MUSCLE	9.6224E-11	9.5870E-11	0.37
OVARIES	9.6224E-11	9.5870E-11	0.37
PANCREAS	9.6224E-11	9.5870E-11	0.37
TESTES	9.6224E-11	9.5870E-11	0.37
THYROID	9.6224E-11	9.5870E-11	0.37
R.B.M.	5.1636E-10	5.1350E-10	0.56
BONE SURFACE	1.3728E-09	1.3650E-09	0.57
STOMACH	1.8437E-10	1.8400E-10	0.20
S.I.	1.4026E-10	1.3990E-10	0.26
U.L.I.	4.1274E-10	4.1230E-10	0.11
L.L.I.	1.0003E-09	9.9950E-10	0.08
SKIN	9.6224E-11	9.5870E-11	0.37
SPLEEN	9.6224E-11	9.5870E-11	0.37
THYMUS	9.6224E-11	9.5870E-11	0.37
UTERUS	9.6224E-11	9.5870E-11	0.37
ET	9.6224E-11	9.5870E-11	0.37
LUNG	9.6224E-11	9.5970E-11	0.26

COLON	6.6683E-10	6.6600E-10	0.12
ET1	9.6224E-11	9.5870E-11	0.37
ET2	9.6224E-11	9.5870E-11	0.37
LN(ET)	9.6224E-11	9.5870E-11	0.37
BBsec	9.6224E-11	9.5870E-11	0.37
BBbas	9.6224E-11	9.5870E-11	0.37
bb	9.6224E-11	9.5870E-11	0.37
AI	9.6224E-11	9.5870E-11	0.37
LN(TH)	9.6224E-11	9.5870E-11	0.37
ESOPHAGUS	9.6224E-11	9.5870E-11	0.37
REMAINDER	**9.7140E-11**	**9.6790E-11**	**0.36**
C.E.D.	**2.4528E-10**	**2.4450E-10**	**0.32**
Maximum			**0.57**

C.10.57. ^{231}Pa – Protactinium-231

Maximum difference in ***Effective Dose***: **-0.18%** (Inhalation – type "M"/Ingestion).
Maximum difference in ***Organ Dose***: **-0.26%** (Ingestion – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.20%**.

C.10.57.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.0854E-08	1.0870E-08	-0.15
URIN BLADDER	4.2245E-09	4.2320E-09	-0.18
BRAIN	6.6690E-09	6.6810E-09	-0.18
BREAST	3.2133E-09	3.2190E-09	-0.18
GALL BLADDER	4.9478E-09	N/A	N/A
HEART	5.2949E-09	N/A	N/A
KIDNEYS	4.3122E-07	4.3130E-07	-0.02
LIVER	2.7603E-07	2.7610E-07	-0.03
MUSCLE	5.4038E-09	5.4130E-09	-0.17
OVARIES	8.1770E-09	8.1920E-09	-0.18
PANCREAS	6.5826E-09	6.5950E-09	-0.19
TESTES	2.6218E-09	2.6260E-09	-0.16
THYROID	4.9445E-09	4.9540E-09	-0.19
R.B.M.	3.5500E-04	3.5570E-04	-0.20
BONE SURFACE	4.4299E-03	4.4380E-03	-0.18
STOMACH	4.4877E-09	4.4950E-09	-0.16
S.I.	8.4761E-09	8.4900E-09	-0.16
U.L.I.	1.4657E-08	1.4670E-08	-0.09
L.L.I.	3.3104E-08	3.3130E-08	-0.08
SKIN	3.4718E-09	3.4780E-09	-0.18
SPLEEN	4.5688E-09	4.5770E-09	-0.18
THYMUS	4.4161E-09	4.4240E-09	-0.18
UTERUS	5.9308E-09	5.9420E-09	-0.19
ET	1.3641E-05	1.3640E-05	0.01
LUNG	1.8025E-05	1.8050E-05	-0.14
COLON	2.2634E-08	2.2640E-08	-0.03
ET1	3.5307E-07	3.5300E-07	0.02
ET2	1.3667E-05	1.3670E-05	-0.02
LN(ET)	6.5489E-07	6.5500E-07	-0.02
BBsec	4.4547E-05	4.4640E-05	-0.21
BBbas	3.3412E-06	3.3480E-06	-0.20
bb	2.1747E-05	2.1700E-05	0.22
AI	8.4308E-06	8.4320E-06	-0.01
LN(TH)	2.9127E-06	2.9140E-06	-0.04
ESOPHAGUS	4.4161E-09	4.4240E-09	-0.18
REMAINDER	**1.6469E-08**	**1.6490E-08**	**-0.13**
C.E.D.	**8.9082E-05**	**8.9240E-05**	**-0.18**
Maximum			**0.22**

C.10.57.2. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.1437E-09	2.1470E-09	-0.15
URIN BLADDER	5.1081E-10	5.1160E-10	-0.15
BRAIN	7.9931E-10	8.0060E-10	-0.16
BREAST	1.3950E-09	1.3970E-09	-0.14
GALL BLADDER	8.7331E-10	N/A	N/A
HEART	2.4701E-09	N/A	N/A
KIDNEYS	9.2596E-08	9.2770E-08	-0.19
LIVER	6.0259E-08	6.0370E-08	-0.18
MUSCLE	1.0844E-09	1.0860E-09	-0.15
OVARIES	9.3926E-10	9.4070E-10	-0.15
PANCREAS	1.4279E-09	1.4300E-09	-0.15
TESTES	3.2449E-10	3.2500E-10	-0.16
THYROID	9.4891E-10	9.5050E-10	-0.17
R.B.M.	3.5447E-05	3.5500E-05	-0.15
BONE SURFACE	4.4230E-04	4.4290E-04	-0.14
STOMACH	1.5582E-09	1.5600E-09	-0.12
S.I.	2.3767E-09	2.3780E-09	-0.05
U.L.I.	1.0047E-08	1.0050E-08	-0.03
L.L.I.	2.8093E-08	2.8100E-08	-0.02
SKIN	6.0201E-10	6.0300E-10	-0.16
SPLEEN	1.2133E-09	1.2150E-09	-0.14
THYMUS	1.7286E-09	1.7320E-09	-0.20
UTERUS	6.8770E-10	6.8880E-10	-0.16
ET	1.0856E-04	1.0860E-04	-0.04
LUNG	7.1756E-05	7.1850E-05	-0.13
COLON	1.7850E-08	1.7850E-08	0.00
ET1	3.6590E-07	3.6590E-07	0.00
ET2	1.0826E-04	1.0830E-04	-0.04
LN(ET)	5.0810E-04	5.0930E-04	-0.24
BBsec	5.9160E-05	5.9280E-05	-0.20
BBbas	5.7896E-06	5.8020E-06	-0.21
bb	4.1839E-05	4.1800E-05	0.09
AI	1.3546E-04	1.3560E-04	-0.10
LN(TH)	1.9012E-03	1.9050E-03	-0.20
ESOPHAGUS	1.7286E-09	1.7320E-09	-0.20
REMAINDER	**5.4962E-08**	**5.5010E-08**	**-0.09**
C.E.D.	**1.7296E-05**	**1.7320E-05**	**-0.14**
Maximum			**-0.24**

C.10.57.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.9912E-11	9.0070E-11	-0.18
URIN BLADDER	4.8531E-11	4.8590E-11	-0.12
BRAIN	5.3963E-11	5.4060E-11	-0.18
BREAST	2.5949E-11	2.5990E-11	-0.16
GALL BLADDER	5.3792E-11	N/A	N/A
HEART	4.3081E-11	N/A	N/A
KIDNEYS	3.3668E-09	3.3670E-09	-0.01

LIVER	2.1561E-09	2.1560E-09	0.00
MUSCLE	4.8929E-11	4.9000E-11	-0.14
OVARIES	1.2524E-10	1.2540E-10	-0.13
PANCREAS	5.8069E-11	5.8160E-11	-0.16
TESTES	2.5196E-11	2.5230E-11	-0.13
THYROID	3.9901E-11	3.9970E-11	-0.17
R.B.M.	2.8815E-06	2.8860E-06	-0.16
BONE SURFACE	3.5957E-05	3.6020E-05	-0.17
STOMACH	1.2676E-09	1.2680E-09	-0.03
S.I.	3.1580E-09	3.1580E-09	0.00
U.L.I.	1.8621E-08	1.8620E-08	0.01
L.L.I.	5.4441E-08	5.4440E-08	0.00
SKIN	2.9579E-11	2.9620E-11	-0.14
SPLEEN	4.0559E-11	4.0620E-11	-0.15
THYMUS	3.5554E-11	3.5610E-11	-0.16
UTERUS	6.7969E-11	6.8050E-11	-0.12
ET	3.9901E-11	3.9970E-11	-0.17
LUNG	4.6727E-11	4.6850E-11	-0.26
COLON	3.4111E-08	3.4100E-08	0.03
ET1	3.9901E-11	3.9970E-11	-0.17
ET2	3.9901E-11	3.9970E-11	-0.17
LN(ET)	3.9901E-11	3.9970E-11	-0.17
BBsec	4.6727E-11	4.6810E-11	-0.18
BBbas	4.6727E-11	4.6810E-11	-0.18
bb	4.6727E-11	4.6810E-11	-0.18
AI	4.6727E-11	4.6810E-11	-0.18
LN(TH)	4.6727E-11	4.6810E-11	-0.18
ESOPHAGUS	3.5554E-11	3.5610E-11	-0.16
REMAINDER	**1.4732E-10**	**1.4750E-10**	**-0.12**
C.E.D.	**7.0975E-07**	**7.1100E-07**	**-0.18**
Maximum			**-0.26**

C.10.58. ^{233}Pa – Protactinium-233

Maximum difference in ***Effective Dose***: **-0.29%** (Inhalation – types "M"/"S").
Maximum difference in ***Organ Dose***: **-0.36%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.32%**.

C.10.58.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.21E-11	7.21E-11	-0.01
URIN BLADDER	4.68E-11	4.68E-11	-0.01
BRAIN	1.71E-11	1.71E-11	-0.01
BREAST	5.35E-11	5.36E-11	-0.01
GALL BLADDER	6.02E-11	N/A	N/A
HEART	9.83E-11	N/A	N/A
KIDNEYS	2.01E-10	2.01E-10	-0.02
LIVER	2.03E-10	2.03E-10	-0.04
MUSCLE	4.35E-11	4.35E-11	-0.02
OVARIES	1.10E-10	1.10E-10	0.01
PANCREAS	5.86E-11	5.86E-11	-0.01
TESTES	1.26E-11	1.26E-11	0.03
THYROID	3.07E-11	3.07E-11	-0.02
R.B.M.	3.62E-10	3.62E-10	-0.10
BONE SURFACE	3.21E-09	3.22E-09	-0.15
STOMACH	1.49E-10	1.49E-10	0.01
S.I.	3.29E-10	3.29E-10	-0.01
U.L.I.	1.55E-09	1.55E-09	-0.01
L.L.I.	4.25E-09	4.25E-09	-0.01
SKIN	1.92E-11	1.92E-11	0.01
SPLEEN	4.92E-11	4.92E-11	-0.02
THYMUS	7.00E-11	7.01E-11	-0.02
UTERUS	5.34E-11	5.34E-11	-0.01
ET	7.14E-09	7.15E-09	-0.01
LUNG	1.90E-08	1.91E-08	-0.36
COLON	2.71E-09	2.71E-09	0.04
ET1	1.98E-06	1.98E-06	0.04
ET2	5.17E-09	5.17E-09	0.00
LN(ET)	2.40E-09	2.40E-09	0.01
BBsec	5.14E-08	5.15E-08	-0.22
BBbas	3.45E-08	3.46E-08	-0.20
bb	1.06E-08	1.05E-08	0.19
AI	3.64E-09	3.64E-09	-0.01
LN(TH)	4.64E-10	4.64E-10	-0.03
ESOPHAGUS	7.00E-11	7.01E-11	-0.02
REMAINDER	**5.34E-11**	**5.34E-11**	**0.01**
C.E.D.	**2.75E-09**	**2.76E-09**	**-0.29**
Maximum			**-0.36**

C.10.58.2. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.55E-11	6.56E-11	-0.03
URIN BLADDER	3.30E-11	3.30E-11	-0.01
BRAIN	9.30E-12	9.30E-12	0.00
BREAST	6.20E-11	6.20E-11	-0.02
GALL BLADDER	4.92E-11	N/A	N/A
HEART	1.13E-10	N/A	N/A
KIDNEYS	3.39E-11	3.39E-11	-0.02
LIVER	6.18E-11	6.18E-11	-0.01
MUSCLE	4.15E-11	4.15E-11	-0.02
OVARIES	1.03E-10	1.03E-10	-0.03
PANCREAS	5.52E-11	5.52E-11	-0.03
TESTES	9.45E-12	9.45E-12	0.00
THYROID	2.91E-11	2.92E-11	-0.02
R.B.M.	6.01E-11	6.01E-11	-0.07
BONE SURFACE	1.45E-10	1.46E-10	-0.32
STOMACH	1.54E-10	1.54E-10	0.00
S.I.	3.36E-10	3.36E-10	0.00
U.L.I.	1.59E-09	1.59E-09	0.02
L.L.I.	4.39E-09	4.39E-09	0.00
SKIN	1.70E-11	1.70E-11	-0.01
SPLEEN	5.05E-11	5.05E-11	-0.02
THYMUS	7.98E-11	7.98E-11	-0.02
UTERUS	4.70E-11	4.70E-11	-0.01
ET	7.88E-09	7.88E-09	-0.01
LUNG	2.31E-08	2.32E-08	-0.35
COLON	2.80E-09	2.80E-09	0.05
ET1	1.98E-06	1.98E-06	-0.02
ET2	5.91E-09	5.91E-09	-0.02
LN(ET)	2.49E-09	2.49E-09	0.02
BBsec	6.20E-08	6.22E-08	-0.22
BBbas	4.17E-08	4.18E-08	-0.22
bb	1.29E-08	1.29E-08	0.19

AI	4.73E-09	4.73E-09	-0.01
LN(TH)	8.27E-10	8.26E-10	0.20
ESOPHAGUS	7.98E-11	7.98E-11	-0.02
REMAINDER	**5.00E-11**	**5.00E-11**	**0.03**
C.E.D.	**3.18E-09**	**3.19E-09**	**-0.29**
Maximum			**-0.35**

C.10.58.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.31E-11	1.31E-11	-0.04
URIN BLADDER	7.46E-11	7.46E-11	0.00
BRAIN	1.48E-13	1.48E-13	0.00
BREAST	2.00E-12	2.00E-12	0.00
GALL BLADDER	6.91E-11	N/A	N/A
HEART	5.18E-12	N/A	N/A
KIDNEYS	3.25E-11	3.25E-11	0.00
LIVER	2.12E-11	2.12E-11	0.02
MUSCLE	2.61E-11	2.61E-11	0.01
OVARIES	2.33E-10	2.33E-10	0.00
PANCREAS	2.70E-11	2.70E-11	0.01
TESTES	2.13E-11	2.13E-11	0.02
THYROID	3.42E-13	3.42E-13	-0.01
R.B.M.	4.56E-11	4.56E-11	-0.01
BONE SURFACE	6.63E-11	6.64E-11	-0.06
STOMACH	2.90E-10	2.90E-10	0.02
S.I.	7.70E-10	7.70E-10	-0.01
U.L.I.	3.68E-09	3.68E-09	0.01
L.L.I.	1.02E-08	1.02E-08	-0.01
SKIN	8.34E-12	8.34E-12	0.00
SPLEEN	2.12E-11	2.12E-11	0.00
THYMUS	1.52E-12	1.52E-12	0.03
UTERUS	1.05E-10	1.05E-10	0.00
ET	3.42E-13	3.42E-13	-0.01
LUNG	3.41E-12	3.42E-12	-0.09
COLON	6.50E-09	6.49E-09	0.05
ET1	3.42E-13	3.42E-13	-0.01
ET2	3.42E-13	3.42E-13	-0.01
LN(ET)	3.42E-13	3.42E-13	-0.01
BBsec	3.41E-12	3.42E-12	-0.01
BBbas	3.41E-12	3.42E-12	-0.01
bb	3.41E-12	3.42E-12	-0.01
AI	3.41E-12	3.42E-12	-0.01
LN(TH)	3.41E-12	3.42E-12	-0.01
ESOPHAGUS	1.52E-12	1.52E-12	0.03
REMAINDER	**4.06E-11**	**4.06E-11**	**-0.07**
C.E.D.	**8.75E-10**	**8.74E-10**	**0.04**
Maximum			**-0.09**

C.10.59. ^{234}Pa – Protactinium-234

Maximum difference in ***Effective Dose***: **-0.09%** (Inhalation – types "M"/"S").
Maximum difference in ***Organ Dose***: **-0.31%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.05%**.

C.10.59.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.60E-11	2.60E-11	0.00
URIN BLADDER	4.41E-11	4.41E-11	0.01
BRAIN	1.94E-11	1.94E-11	0.02
BREAST	1.67E-11	1.67E-11	0.03
GALL BLADDER	7.24E-11	N/A	N/A
HEART	2.78E-11	N/A	N/A
KIDNEYS	3.85E-11	3.85E-11	0.00
LIVER	3.54E-11	3.54E-11	0.01
MUSCLE	3.64E-11	3.64E-11	0.02
OVARIES	1.33E-10	1.33E-10	0.02
PANCREAS	4.50E-11	4.50E-11	0.00
TESTES	1.06E-11	1.06E-11	0.04
THYROID	2.22E-11	2.22E-11	0.01
R.B.M.	4.49E-11	4.49E-11	0.00
BONE SURFACE	5.57E-11	5.58E-11	-0.02
STOMACH	2.96E-10	2.96E-10	-0.02
S.I.	5.03E-10	5.03E-10	0.00
U.L.I.	1.17E-09	1.17E-09	0.03
L.L.I.	9.19E-10	9.19E-10	0.02
SKIN	1.59E-11	1.59E-11	-0.02
SPLEEN	3.25E-11	3.25E-11	0.01
THYMUS	3.19E-11	3.19E-11	0.02
UTERUS	7.70E-11	7.70E-11	0.01
ET	7.50E-09	7.50E-09	0.02
LUNG	1.35E-09	1.36E-09	-0.31
COLON	1.06E-09	1.06E-09	0.00
ET1	1.25E-06	1.25E-06	0.00
ET2	6.26E-09	6.26E-09	0.02
LN(ET)	4.88E-09	4.88E-09	0.03
BBsec	3.72E-09	3.72E-09	-0.16
BBbas	2.50E-09	2.51E-09	-0.18
bb	7.83E-10	7.82E-10	0.22
AI	1.63E-10	1.63E-10	0.01
LN(TH)	5.32E-11	5.32E-11	0.00
ESOPHAGUS	3.19E-11	3.19E-11	0.02
REMAINDER	**3.77E-09**	**3.77E-09**	**0.02**
C.E.D.	**5.54E-10**	**5.55E-10**	**-0.09**
Maximum			**-0.31**

C.10.59.2. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.51E-11	2.51E-11	0.01
URIN BLADDER	3.62E-11	3.62E-11	0.02
BRAIN	1.81E-11	1.81E-11	0.00
BREAST	1.64E-11	1.64E-11	-0.01
GALL BLADDER	7.32E-11	N/A	N/A
HEART	2.76E-11	N/A	N/A
KIDNEYS	3.49E-11	3.49E-11	0.02
LIVER	3.02E-11	3.02E-11	0.00
MUSCLE	3.60E-11	3.60E-11	0.01
OVARIES	1.37E-10	1.37E-10	-0.01
PANCREAS	4.52E-11	4.52E-11	0.00
TESTES	9.64E-12	9.64E-12	0.01
THYROID	2.10E-11	2.10E-11	0.00
R.B.M.	4.12E-11	4.12E-11	0.02

BONE SURFACE	2.94E-11	2.94E-11	0.00
STOMACH	3.09E-10	3.09E-10	0.02
S.I.	5.27E-10	5.27E-10	0.01
U.L.I.	1.22E-09	1.22E-09	-0.02
L.L.I.	9.54E-10	9.54E-10	0.03
SKIN	1.52E-11	1.52E-11	0.01
SPLEEN	3.26E-11	3.26E-11	0.00
THYMUS	3.14E-11	3.14E-11	0.01
UTERUS	7.85E-11	7.85E-11	0.00
ET	7.59E-09	7.58E-09	0.02
LUNG	1.49E-09	1.50E-09	-0.29
COLON	1.10E-09	1.11E-09	-0.02
ET1	1.25E-06	1.25E-06	0.00
ET2	6.35E-09	6.35E-09	0.02
LN(ET)	4.89E-09	4.89E-09	0.01
BBsec	4.11E-09	4.12E-09	-0.16
BBbas	2.76E-09	2.77E-09	-0.19
bb	8.65E-10	8.63E-10	0.23
AI	1.77E-10	1.77E-10	0.03
LN(TH)	5.71E-11	5.71E-11	0.03
ESOPHAGUS	3.14E-11	3.14E-11	0.01
REMAINDER	**3.82E-09**	**3.82E-09**	**0.01**
C.E.D.	**5.79E-10**	**5.80E-10**	**-0.09**
Maximum			**-0.29**

C.10.59.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.03E-11	4.03E-11	0.02
URIN BLADDER	8.95E-11	8.95E-11	0.02
BRAIN	2.81E-13	2.81E-13	0.00
BREAST	8.72E-12	8.72E-12	0.01
GALL BLADDER	1.74E-10	N/A	N/A
HEART	2.12E-11	N/A	N/A
KIDNEYS	7.82E-11	7.82E-11	0.01
LIVER	5.57E-11	5.57E-11	0.01
MUSCLE	4.74E-11	4.74E-11	0.02
OVARIES	3.41E-10	3.41E-10	0.03
PANCREAS	9.58E-11	9.58E-11	0.00
TESTES	2.37E-11	2.37E-11	0.00
THYROID	1.34E-12	1.34E-12	0.02
R.B.M.	6.90E-11	6.90E-11	0.01
BONE SURFACE	3.23E-11	3.23E-11	0.02
STOMACH	7.60E-10	7.60E-10	0.00
S.I.	1.31E-09	1.31E-09	-0.02
U.L.I.	3.04E-09	3.04E-09	0.00
L.L.I.	2.38E-09	2.38E-09	0.03
SKIN	1.79E-11	1.79E-11	-0.01
SPLEEN	6.46E-11	6.46E-11	0.00
THYMUS	6.22E-12	6.22E-12	0.01
UTERUS	1.95E-10	1.95E-10	0.01
ET	1.34E-12	1.34E-12	0.02
LUNG	1.31E-11	1.31E-11	-0.10
COLON	2.76E-09	2.76E-09	0.00
ET1	1.34E-12	1.34E-12	0.02
ET2	1.34E-12	1.34E-12	0.02
LN(ET)	1.34E-12	1.34E-12	0.02
BBsec	1.31E-11	1.31E-11	-0.02
BBbas	1.31E-11	1.31E-11	-0.02
bb	1.31E-11	1.31E-11	-0.02
AI	1.31E-11	1.31E-11	-0.02
LN(TH)	1.31E-11	1.31E-11	-0.02
ESOPHAGUS	6.22E-12	6.22E-12	0.01
REMAINDER	**7.24E-11**	**7.25E-11**	**-0.05**
C.E.D.	**5.12E-10**	**5.12E-10**	**0.01**
Maximum			**-0.10**

C.10.60. ^{210}Pb – Lead-210 (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: +**36.21%** (Ingestion).
Maximum difference in ***Organ Dose***: **+189.67%** (Ingestion – Skin).
Maximum difference excluding ***Respiratory Tract***: +**189.67%**.

C.10.60.1. Acute Inhalation (Type F: f_1 = 0.2)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.00E-07	1.38E-07	189.52
URIN BLADDER	4.01E-07	1.40E-07	187.4
BRAIN	4.00E-07	1.38E-07	189.52
BREAST	4.00E-07	1.38E-07	189.49
GALL BLADDER	4.00E-07	N/A	N/A
HEART	4.00E-07	N/A	N/A
KIDNEYS	3.11E-06	5.87E-06	-46.98
LIVER	7.70E-06	3.03E-06	154.64
MUSCLE	4.00E-07	1.38E-07	189.50
OVARIES	4.00E-07	1.38E-07	189.51
PANCREAS	4.00E-07	1.38E-07	189.51
TESTES	4.00E-07	1.38E-07	189.49
THYROID	4.00E-07	1.38E-07	189.50
R.B.M.	3.34E-06	3.96E-06	-15.43
BONE SURFACE	3.70E-05	3.62E-05	2.26
STOMACH	4.00E-07	1.38E-07	189.50
S.I.	4.01E-07	1.38E-07	189.63
U.L.I.	4.02E-07	1.42E-07	183.79
L.L.I.	4.05E-07	1.48E-07	172.99
SKIN	4.00E-07	1.38E-07	189.49
SPLEEN	4.00E-07	4.42E-06	-90.94
THYMUS	4.00E-07	1.38E-07	189.49
UTERUS	4.00E-07	1.38E-07	189.49
ET	4.01E-07	1.39E-07	188.56
LUNG	4.00E-07	1.38E-07	189.30
COLON	4.03E-07	1.45E-07	179.07
ET1	6.32E-07	3.70E-07	70.84
ET2	4.01E-07	1.39E-07	188.81
LN(ET)	4.01E-07	1.39E-07	188.81
BBsec	4.00E-07	1.38E-07	189.51
BBbas	4.00E-07	1.38E-07	189.51
bb	4.00E-07	1.38E-07	189.51
AI	4.00E-07	1.38E-07	189.51
LN(TH)	4.00E-07	1.38E-07	189.51
ESOPHAGUS	4.00E-07	1.38E-07	189.49
REMAINDER	**4.28E-07**	**2.21E-07**	**93.37**

C.E.D.	**1.49E-06**	**1.11E-06**	**34.38**
Maximum			**189.60**

C.10.60.2. Acute Ingestion (f_1 = 0.2)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.49E-07	8.62E-08	189.60
URIN BLADDER	2.50E-07	8.69E-08	187.49
BRAIN	2.49E-07	8.62E-08	189.59
BREAST	2.49E-07	8.61E-08	189.67
GALL BLADDER	2.49E-07	N/A	N/A
HEART	2.49E-07	N/A	N/A
KIDNEYS	1.94E-06	3.66E-06	-46.95
LIVER	4.80E-06	1.88E-06	154.75
MUSCLE	2.49E-07	8.61E-08	189.61
OVARIES	2.49E-07	8.61E-08	189.61
PANCREAS	2.49E-07	8.61E-08	189.61
TESTES	2.49E-07	8.61E-08	189.65
THYROID	2.49E-07	8.61E-08	189.63
R.B.M.	2.08E-06	2.46E-06	-15.40
BONE SURFACE	2.30E-05	2.25E-05	2.26
STOMACH	2.50E-07	8.62E-08	189.56
S.I.	2.50E-07	8.63E-08	189.45
U.L.I.	2.51E-07	8.92E-08	181.90
L.L.I.	2.57E-07	9.68E-08	165.26
SKIN	2.49E-07	8.61E-08	189.67
SPLEEN	2.49E-07	2.75E-06	-90.94
THYMUS	2.49E-07	8.61E-08	189.63
UTERUS	2.49E-07	8.61E-08	189.63
ET	2.49E-07	8.61E-08	189.63
LUNG	2.49E-07	8.62E-08	189.34
COLON	2.54E-07	9.24E-08	174.38
ET1	2.49E-07	8.61E-08	189.63
ET2	2.49E-07	8.61E-08	189.63
LN(ET)	2.49E-07	8.61E-08	189.63
BBsec	2.49E-07	8.61E-08	189.61
BBbas	2.49E-07	8.61E-08	189.61
bb	2.49E-07	8.61E-08	189.61
AI	2.49E-07	8.61E-08	189.61
LN(TH)	2.49E-07	8.61E-08	189.61
ESOPHAGUS	2.49E-07	8.61E-08	189.63
REMAINDER	**2.67E-07**	**1.38E-07**	**93.41**
C.E.D.	**9.26E-07**	**6.80E-07**	**36.21**
Maximum			**189.70**

Note: ICRP Publication 68 (ICRP 1994b) tabulated dose coefficients (and **PLEIADES**) assume independent progeny kinetics. IMBA assumes the same biokinetic model (lead) for the progeny as for the parent.

C.10.61. ^{147}Pm – Promethium-147

Maximum difference in ***Effective Dose***: **-0.24%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.34%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.04%**.

C.10.61.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.2039E-13	3.2040E-13	0.00
URIN BLADDER	2.8110E-12	2.8110E-12	0.00
BRAIN	2.7028E-13	2.7030E-13	-0.01
BREAST	2.7466E-13	2.7460E-13	0.02
GALL BLADDER	3.5325E-13	N/A	N/A
HEART	2.9732E-13	N/A	N/A
KIDNEYS	2.9814E-13	2.9810E-13	0.01
LIVER	1.3543E-08	1.3540E-08	0.02
MUSCLE	2.7707E-13	2.7710E-13	-0.01
OVARIES	2.7862E-13	2.7860E-13	0.01
PANCREAS	3.0741E-13	3.0740E-13	0.00
TESTES	2.6398E-13	2.6400E-13	-0.01
THYROID	2.6959E-13	2.6960E-13	0.00
R.B.M.	4.0557E-09	4.0560E-09	-0.01
BONE SURFACE	5.0664E-08	5.0670E-08	-0.01
STOMACH	3.0167E-11	3.0170E-11	-0.01
S.I.	7.4950E-11	7.4950E-11	0.00
U.L.I.	4.6130E-10	4.6130E-10	0.00
L.L.I.	1.3519E-09	1.3520E-09	-0.01
SKIN	2.6870E-13	2.6870E-13	0.00
SPLEEN	2.7575E-13	2.7570E-13	0.02
THYMUS	2.7694E-13	2.7690E-13	0.01
UTERUS	2.7271E-13	2.7270E-13	0.00
ET	5.3959E-09	5.3970E-09	-0.02
LUNG	1.4570E-08	1.4620E-08	-0.34
COLON	8.4643E-10	8.4610E-10	0.04
ET1	8.1526E-07	8.1520E-07	0.01
ET2	4.5895E-09	4.5910E-09	-0.03
LN(ET)	2.6831E-10	2.6840E-10	-0.03
BBsec	3.7882E-08	3.7960E-08	-0.21
BBbas	2.2901E-08	2.2950E-08	-0.21
bb	8.9274E-09	8.9100E-09	0.20
AI	4.4340E-09	4.4350E-09	-0.02
LN(TH)	6.6121E-10	6.6140E-10	-0.03
ESOPHAGUS	2.7694E-13	2.7690E-13	0.01
REMAINDER	**4.4620E-12**	**4.4650E-12**	**-0.07**
C.E.D.	**3.5245E-09**	**3.5300E-09**	**-0.16**
Maximum			**-0.34**

C.10.61.2. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.4385E-14	3.4390E-14	-0.01
URIN BLADDER	1.4552E-13	1.4550E-13	0.01

BRAIN	1.4580E-14	1.4580E-14	0.00
BREAST	3.2190E-14	3.2190E-14	0.00
GALL BLADDER	2.4124E-14	N/A	N/A
HEART	5.0968E-14	N/A	N/A
KIDNEYS	2.0211E-14	2.0210E-14	0.00
LIVER	6.9657E-10	6.9670E-10	-0.02
MUSCLE	2.2316E-14	2.2320E-14	-0.02
OVARIES	1.7503E-14	1.7500E-14	0.02
PANCREAS	2.9097E-14	2.9100E-14	-0.01
TESTES	1.3797E-14	1.3800E-14	-0.02
THYROID	2.0222E-14	2.0220E-14	0.01
R.B.M.	2.0861E-10	2.0860E-10	0.00
BONE SURFACE	2.6058E-09	2.6060E-09	-0.01
STOMACH	3.2883E-11	3.2880E-11	0.01
S.I.	8.2110E-11	8.2110E-11	0.00
U.L.I.	4.9722E-10	4.9720E-10	0.00
L.L.I.	1.4577E-09	1.4580E-09	-0.02
SKIN	1.6928E-14	1.6930E-14	-0.01
SPLEEN	2.7197E-14	2.7200E-14	-0.01
THYMUS	3.6814E-14	3.6820E-14	-0.02
UTERUS	1.5486E-14	1.5480E-14	0.04
ET	1.8740E-08	1.8740E-08	0.00
LUNG	2.4986E-08	2.5050E-08	-0.26
COLON	9.1258E-10	9.1220E-10	0.04
ET1	8.1526E-07	8.1520E-07	0.01
ET2	1.7953E-08	1.7960E-08	-0.04
LN(ET)	7.6183E-09	7.6210E-09	-0.04
BBsec	4.9250E-08	4.9350E-08	-0.20
BBbas	3.0039E-08	3.0100E-08	-0.20
bb	1.6517E-08	1.6490E-08	0.16
AI	1.8841E-08	1.8840E-08	0.01
LN(TH)	1.0407E-08	1.0410E-08	-0.03
ESOPHAGUS	3.6814E-14	3.6820E-14	-0.02
REMAINDER	**1.0869E-11**	**1.0880E-11**	**-0.10**
C.E.D.	**3.1983E-09**	**3.2060E-09**	**-0.24**
Maximum			**-0.26**

C.10.61.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.9790E-15	2.9790E-15	0.00
URIN BLADDER	2.6084E-14	2.6080E-14	0.02
BRAIN	2.3168E-15	2.3160E-15	0.03
BREAST	2.3444E-15	2.3440E-15	0.02
GALL BLADDER	4.8335E-15	N/A	N/A
HEART	2.5695E-15	N/A	N/A
KIDNEYS	3.2212E-15	3.2210E-15	0.01
LIVER	1.1619E-10	1.1620E-10	-0.01
MUSCLE	3.0065E-15	3.0060E-15	0.02
OVARIES	8.8877E-15	8.8870E-15	0.01
PANCREAS	3.2537E-15	3.2530E-15	0.02
TESTES	2.7177E-15	2.7170E-15	0.03
THYROID	2.3008E-15	2.3000E-15	0.03
R.B.M.	3.4795E-11	3.4800E-11	-0.01
BONE SURFACE	4.3465E-10	4.3470E-10	-0.01
STOMACH	7.1386E-11	7.1380E-11	0.01
S.I.	1.7836E-10	1.7830E-10	0.03
U.L.I.	1.0792E-09	1.0790E-09	0.02
L.L.I.	3.1640E-09	3.1640E-09	0.00
SKIN	2.4699E-15	2.4690E-15	0.04
SPLEEN	2.8356E-15	2.8350E-15	0.02
THYMUS	2.3455E-15	2.3450E-15	0.02
UTERUS	5.1116E-15	5.1110E-15	0.01
ET	2.3008E-15	2.3000E-15	0.03
LUNG	2.5284E-15	2.5300E-15	-0.06
COLON	1.9807E-09	1.9800E-09	0.04
ET1	2.3008E-15	2.3000E-15	0.03
ET2	2.3008E-15	2.3000E-15	0.03
LN(ET)	2.3008E-15	2.3000E-15	0.03
BBsec	2.5284E-15	2.5280E-15	0.02
BBbas	2.5284E-15	2.5280E-15	0.02
bb	2.5284E-15	2.5280E-15	0.02
AI	2.5284E-15	2.5280E-15	0.02
LN(TH)	2.5284E-15	2.5280E-15	0.02
ESOPHAGUS	2.3455E-15	2.3450E-15	0.02
REMAINDER	**3.7140E-12**	**3.7160E-12**	**-0.05**
C.E.D.	**2.6077E-10**	**2.6070E-10**	**0.03**
Maximum			**-0.06**

C.10.62. ^{208}Po – Polonium-208

Maximum difference in ***Effective Dose***: **-0.15%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **+0.15%** (Ingestion – Numerous).
Maximum difference excluding ***Respiratory Tract***: **+0.15%**.

C.10.62.1. Acute Inhalation (Type F: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.11E-07	2.10E-07	0.11
URIN BLADDER	2.11E-07	2.11E-07	0.15
BRAIN	2.11E-07	2.10E-07	0.11
BREAST	2.11E-07	2.10E-07	0.11
GALL BLADDER	2.11E-07	N/A	N/A
HEART	2.11E-07	N/A	N/A
KIDNEYS	9.66E-06	9.66E-06	-0.01
LIVER	4.99E-06	4.99E-06	0.00
MUSCLE	2.11E-07	2.10E-07	0.11
OVARIES	2.11E-07	2.10E-07	0.11
PANCREAS	2.11E-07	2.10E-07	0.11
TESTES	2.11E-07	2.10E-07	0.11
THYROID	2.11E-07	2.10E-07	0.11
R.B.M.	2.00E-06	2.00E-06	-0.03
BONE SURFACE	1.21E-06	1.21E-06	0.02
STOMACH	2.11E-07	2.11E-07	0.13
S.I.	2.11E-07	2.11E-07	0.13
U.L.I.	2.17E-07	2.17E-07	0.12
L.L.I.	2.30E-07	2.30E-07	0.12
SKIN	2.11E-07	2.10E-07	0.11
SPLEEN	8.31E-06	8.31E-06	0.00
THYMUS	2.11E-07	2.10E-07	0.11
UTERUS	2.11E-07	2.10E-07	0.11
ET	2.13E-07	2.12E-07	0.15
LUNG	2.24E-07	2.24E-07	0.01

COLON	2.23E-07	2.23E-07	0.13
ET1	1.21E-06	1.21E-06	0.01
ET2	2.12E-07	2.11E-07	0.15
LN(ET)	2.11E-07	2.10E-07	0.11
BBsec	2.54E-07	2.54E-07	0.07
BBbas	2.11E-07	2.11E-07	0.12
bb	2.29E-07	2.29E-07	0.14
AI	2.11E-07	2.11E-07	0.16
LN(TH)	2.11E-07	2.10E-07	0.11
ESOPHAGUS	2.11E-07	2.10E-07	0.11
REMAINDER	**4.96E-06**	**4.96E-06**	**0.00**
C.E.D.	**9.14E-07**	**9.14E-07**	**0.02**
Maximum			**0.16**

C.10.62.2. Acute Inhalation (Type M: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.01E-08	7.00E-08	0.13
URIN BLADDER	7.03E-08	7.02E-08	0.13
BRAIN	7.01E-08	7.00E-08	0.13
BREAST	7.01E-08	7.00E-08	0.13
GALL BLADDER	7.01E-08	N/A	N/A
HEART	7.01E-08	N/A	N/A
KIDNEYS	3.22E-06	3.22E-06	0.01
LIVER	1.66E-06	1.66E-06	-0.02
MUSCLE	7.01E-08	7.00E-08	0.13
OVARIES	7.01E-08	7.00E-08	0.13
PANCREAS	7.01E-08	7.00E-08	0.13
TESTES	7.01E-08	7.00E-08	0.13
THYROID	7.01E-08	7.00E-08	0.13
R.B.M.	6.65E-07	6.65E-07	-0.01
BONE SURFACE	4.02E-07	4.01E-07	0.03
STOMACH	7.06E-08	7.05E-08	0.14
S.I.	7.12E-08	7.11E-08	0.13
U.L.I.	7.80E-08	7.79E-08	0.11
L.L.I.	9.31E-08	9.31E-08	0.10
SKIN	7.01E-08	7.00E-08	0.13
SPLEEN	2.77E-06	2.77E-06	0.01
THYMUS	7.01E-08	7.00E-08	0.13
UTERUS	7.01E-08	7.00E-08	0.13
ET	1.19E-05	1.19E-05	-0.03
LUNG	1.82E-05	1.83E-05	-0.15
COLON	8.45E-08	8.44E-08	0.12
ET1	1.07E-06	1.07E-06	0.05
ET2	1.19E-05	1.19E-05	0.00
LN(ET)	5.29E-07	5.29E-07	-0.01
BBsec	4.78E-05	4.79E-05	-0.21
BBbas	3.39E-06	3.40E-06	-0.19
bb	2.16E-05	2.16E-05	0.22
AI	7.55E-06	7.55E-06	-0.01
LN(TH)	2.32E-06	2.32E-06	-0.02
ESOPHAGUS	7.01E-08	7.00E-08	0.13
REMAINDER	**1.23E-07**	**1.23E-07**	**0.06**
C.E.D.	**2.41E-06**	**2.41E-06**	**-0.15**
Maximum			**0.22**

C.10.62.3. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.00E-08	6.99E-08	0.15
URIN BLADDER	7.01E-08	7.00E-08	0.14
BRAIN	7.00E-08	6.99E-08	0.15
BREAST	7.00E-08	6.99E-08	0.15
GALL BLADDER	7.00E-08	N/A	N/A
HEART	7.00E-08	N/A	N/A
KIDNEYS	3.21E-06	3.21E-06	-0.01
LIVER	1.66E-06	1.66E-06	-0.01
MUSCLE	7.00E-08	6.99E-08	0.15
OVARIES	7.00E-08	6.99E-08	0.15
PANCREAS	7.00E-08	6.99E-08	0.15
TESTES	7.00E-08	6.99E-08	0.15
THYROID	7.00E-08	6.99E-08	0.15
R.B.M.	6.63E-07	6.63E-07	0.00
BONE SURFACE	4.01E-07	4.01E-07	0.02
STOMACH	7.11E-08	7.10E-08	0.15
S.I.	7.26E-08	7.25E-08	0.15
U.L.I.	8.71E-08	8.70E-08	0.12
L.L.I.	1.20E-07	1.20E-07	0.10
SKIN	7.00E-08	6.99E-08	0.15
SPLEEN	2.76E-06	2.76E-06	0.00
THYMUS	7.00E-08	6.99E-08	0.15
UTERUS	7.00E-08	6.99E-08	0.15
ET	7.00E-08	6.99E-08	0.15
LUNG	7.00E-08	6.99E-08	0.05
COLON	1.01E-07	1.01E-07	0.08
ET1	7.00E-08	6.99E-08	0.15
ET2	7.00E-08	6.99E-08	0.15
LN(ET)	7.00E-08	6.99E-08	0.15
BBsec	7.00E-08	6.99E-08	0.15
BBbas	7.00E-08	6.99E-08	0.15
bb	7.00E-08	6.99E-08	0.15
AI	7.00E-08	6.99E-08	0.15
LN(TH)	7.00E-08	6.99E-08	0.15
ESOPHAGUS	7.00E-08	6.99E-08	0.15
REMAINDER	**1.65E-06**	**1.65E-06**	**-0.01**
C.E.D.	**3.07E-07**	**3.07E-07**	**0.02**
Maximum			**0.15**

C.10.63. ^{209}Po – Polonium-209

Maximum difference in ***Effective Dose***: **-0.12%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **+0.16%** (Inhalation – type "M" – U.L.I.).
Maximum difference excluding ***Respiratory Tract***: **+0.16%**.

C.10.63.1. Acute Inhalation (Type F: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.09E-07	2.09E-07	0.14
URIN BLADDER	2.10E-07	2.10E-07	0.12
BRAIN	2.09E-07	2.09E-07	0.13
BREAST	2.09E-07	2.09E-07	0.13

GALL BLADDER	2.09E-07	N/A	N/A
HEART	2.09E-07	N/A	N/A
KIDNEYS	9.61E-06	9.61E-06	0.01
LIVER	4.96E-06	4.96E-06	0.00
MUSCLE	2.09E-07	2.09E-07	0.14
OVARIES	2.09E-07	2.09E-07	0.14
PANCREAS	2.09E-07	2.09E-07	0.14
TESTES	2.09E-07	2.09E-07	0.13
THYROID	2.09E-07	2.09E-07	0.13
R.B.M.	1.99E-06	1.99E-06	0.02
BONE SURFACE	1.20E-06	1.20E-06	0.01
STOMACH	2.10E-07	2.09E-07	0.15
S.I.	2.10E-07	2.10E-07	0.14
U.L.I.	2.16E-07	2.16E-07	0.16
L.L.I.	2.28E-07	2.28E-07	0.14
SKIN	2.09E-07	2.09E-07	0.13
SPLEEN	8.27E-06	8.27E-06	0.00
THYMUS	2.09E-07	2.09E-07	0.13
UTERUS	2.09E-07	2.09E-07	0.14
ET	2.10E-07	2.10E-07	0.15
LUNG	2.21E-07	2.21E-07	0.02
COLON	2.21E-07	2.21E-07	0.15
ET1	2.72E-07	2.72E-07	0.11
ET2	2.10E-07	2.10E-07	0.12
LN(ET)	2.10E-07	2.09E-07	0.15
BBsec	2.44E-07	2.43E-07	0.11
BBbas	2.10E-07	2.10E-07	0.13
bb	2.27E-07	2.27E-07	0.14
AI	2.10E-07	2.10E-07	0.12
LN(TH)	2.09E-07	2.09E-07	0.14
ESOPHAGUS	2.09E-07	2.09E-07	0.13
REMAINDER	**4.93E-06**	**4.93E-06**	**0.00**
C.E.D.	**9.09E-07**	**9.09E-07**	**0.03**
Maximum			**0.16**

C.10.63.2. Acute Inhalation (Type M: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.18E-08	7.17E-08	0.14
URIN BLADDER	7.20E-08	7.19E-08	0.14
BRAIN	7.18E-08	7.17E-08	0.14
BREAST	7.18E-08	7.17E-08	0.14
GALL BLADDER	7.18E-08	N/A	N/A
HEART	7.18E-08	N/A	N/A
KIDNEYS	3.30E-06	3.30E-06	-0.01
LIVER	1.70E-06	1.70E-06	0.02
MUSCLE	7.18E-08	7.17E-08	0.14
OVARIES	7.18E-08	7.17E-08	0.14
PANCREAS	7.18E-08	7.17E-08	0.14
TESTES	7.18E-08	7.17E-08	0.14
THYROID	7.18E-08	7.17E-08	0.14
R.B.M.	6.81E-07	6.81E-07	-0.01
BONE SURFACE	4.12E-07	4.11E-07	0.03
STOMACH	7.23E-08	7.22E-08	0.14
S.I.	7.29E-08	7.28E-08	0.14
U.L.I.	7.94E-08	7.93E-08	0.13
L.L.I.	9.41E-08	9.40E-08	0.11
SKIN	7.18E-08	7.17E-08	0.14
SPLEEN	2.84E-06	2.84E-06	-0.01
THYMUS	7.18E-08	7.17E-08	0.14
UTERUS	7.18E-08	7.17E-08	0.14
ET	1.26E-05	1.27E-05	-0.01
LUNG	1.71E-05	1.71E-05	-0.11
COLON	8.57E-08	8.56E-08	0.13
ET1	1.34E-07	1.34E-07	0.05
ET2	1.27E-05	1.27E-05	-0.05
LN(ET)	6.16E-07	6.16E-07	-0.01
BBsec	4.12E-05	4.13E-05	-0.21
BBbas	3.04E-06	3.04E-06	-0.20
bb	2.12E-05	2.12E-05	0.24
AI	7.90E-06	7.90E-06	-0.01
LN(TH)	2.61E-06	2.61E-06	-0.02
ESOPHAGUS	7.18E-08	7.17E-08	0.14
REMAINDER	**1.27E-07**	**1.27E-07**	**0.06**
C.E.D.	**2.27E-06**	**2.28E-06**	**-0.12**
Maximum			**0.24**

C.10.63.3. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.96E-08	6.95E-08	0.14
URIN BLADDER	6.97E-08	6.96E-08	0.15
BRAIN	6.96E-08	6.95E-08	0.15
BREAST	6.96E-08	6.95E-08	0.15
GALL BLADDER	6.96E-08	N/A	N/A
HEART	6.96E-08	N/A	N/A
KIDNEYS	3.19E-06	3.19E-06	0.00
LIVER	1.65E-06	1.65E-06	-0.02
MUSCLE	6.96E-08	6.95E-08	0.15
OVARIES	6.96E-08	6.95E-08	0.14
PANCREAS	6.96E-08	6.95E-08	0.14
TESTES	6.96E-08	6.95E-08	0.15
THYROID	6.96E-08	6.95E-08	0.15
R.B.M.	6.60E-07	6.60E-07	0.00
BONE SURFACE	3.99E-07	3.99E-07	0.02
STOMACH	7.07E-08	7.06E-08	0.14
S.I.	7.21E-08	7.20E-08	0.14
U.L.I.	8.60E-08	8.59E-08	0.13
L.L.I.	1.18E-07	1.18E-07	0.08
SKIN	6.96E-08	6.95E-08	0.15
SPLEEN	2.75E-06	2.75E-06	0.01
THYMUS	6.96E-08	6.95E-08	0.15
UTERUS	6.96E-08	6.95E-08	0.15
ET	6.96E-08	6.95E-08	0.15
LUNG	6.96E-08	6.95E-08	0.05
COLON	9.97E-08	9.96E-08	0.12
ET1	6.96E-08	6.95E-08	0.15
ET2	6.96E-08	6.95E-08	0.15
LN(ET)	6.96E-08	6.95E-08	0.15
BBsec	6.96E-08	6.95E-08	0.15
BBbas	6.96E-08	6.95E-08	0.15
bb	6.96E-08	6.95E-08	0.15
AI	6.96E-08	6.95E-08	0.15
LN(TH)	6.96E-08	6.95E-08	0.15
ESOPHAGUS	6.96E-08	6.95E-08	0.15
REMAINDER	**1.64E-06**	**1.64E-06**	**-0.02**
C.E.D.	**3.05E-07**	**3.05E-07**	**0.02**
Maximum			**0.15**

C.10.64. ^{210}Po – Polonium-210

Maximum difference in ***Effective Dose***: **-0.14%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **+0.16%** (Ingestion – Urinary Bladder).
Maximum difference excluding ***Respiratory Tract***: **+0.16%**.

C.10.64.1. Acute Inhalation (Type F: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.6484E-07	1.6460E-07	0.15
URIN BLADDER	1.6522E-07	1.6500E-07	0.13
BRAIN	1.6484E-07	1.6460E-07	0.15
BREAST	1.6484E-07	1.6460E-07	0.15
GALL BLADDER	1.6484E-07	N/A	N/A
HEART	1.6484E-07	N/A	N/A
KIDNEYS	7.5354E-06	7.5350E-06	0.01
LIVER	3.8923E-06	3.8920E-06	0.01
MUSCLE	1.6484E-07	1.6460E-07	0.15
OVARIES	1.6484E-07	1.6460E-07	0.15
PANCREAS	1.6484E-07	1.6460E-07	0.15
TESTES	1.6484E-07	1.6460E-07	0.15
THYROID	1.6484E-07	1.6460E-07	0.15
R.B.M.	1.5579E-06	1.5580E-06	-0.01
BONE SURFACE	9.4147E-07	9.4120E-07	0.03
STOMACH	1.6509E-07	1.6490E-07	0.12
S.I.	1.6539E-07	1.6520E-07	0.12
U.L.I.	1.7086E-07	1.7060E-07	0.15
L.L.I.	1.8242E-07	1.8220E-07	0.12
SKIN	1.6484E-07	1.6460E-07	0.15
SPLEEN	6.4858E-06	6.4860E-06	0.00
THYMUS	1.6484E-07	1.6460E-07	0.15
UTERUS	1.6484E-07	1.6460E-07	0.15
ET	1.7196E-07	1.7170E-07	0.15
LUNG	1.7994E-07	1.7990E-07	0.02
COLON	1.7586E-07	1.7560E-07	0.15
ET1	6.3358E-06	6.3350E-06	0.01
ET2	1.6579E-07	1.6560E-07	0.11
LN(ET)	1.6484E-07	1.6460E-07	0.15
BBsec	2.1531E-07	2.1520E-07	0.05
BBbas	1.6575E-07	1.6550E-07	0.15
bb	1.8379E-07	1.8350E-07	0.16
AI	1.6555E-07	1.6530E-07	0.15
LN(TH)	1.6484E-07	1.6460E-07	0.15
ESOPHAGUS	1.6484E-07	1.6460E-07	0.15
REMAINDER	**3.8688E-06**	**3.8690E-06**	**-0.01**
C.E.D.	**7.1453E-07**	**7.1430E-07**	**0.03**
Maximum			**0.16**

C.10.64.2. Acute Inhalation (Type M: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.8584E-08	4.8520E-08	0.13
URIN BLADDER	4.8694E-08	4.8630E-08	0.13
BRAIN	4.8584E-08	4.8520E-08	0.13
BREAST	4.8584E-08	4.8520E-08	0.13
GALL BLADDER	4.8584E-08	N/A	N/A
HEART	4.8584E-08	N/A	N/A
KIDNEYS	2.2209E-06	2.2210E-06	0.00
LIVER	1.1473E-06	1.1470E-06	0.03
MUSCLE	4.8584E-08	4.8520E-08	0.13
OVARIES	4.8584E-08	4.8520E-08	0.13
PANCREAS	4.8584E-08	4.8520E-08	0.13
TESTES	4.8584E-08	4.8520E-08	0.13
THYROID	4.8584E-08	4.8520E-08	0.13
R.B.M.	4.5916E-07	4.5910E-07	0.01
BONE SURFACE	2.7748E-07	2.7740E-07	0.03
STOMACH	4.9090E-08	4.9020E-08	0.14
S.I.	4.9721E-08	4.9650E-08	0.14
U.L.I.	5.6247E-08	5.6180E-08	0.12
L.L.I.	7.0955E-08	7.0890E-08	0.09
SKIN	4.8584E-08	4.8520E-08	0.13
SPLEEN	1.9116E-06	1.9120E-06	-0.02
THYMUS	4.8584E-08	4.8520E-08	0.13
UTERUS	4.8584E-08	4.8520E-08	0.13
ET	7.3377E-06	7.3390E-06	-0.02
LUNG	1.6643E-05	1.6670E-05	-0.16
COLON	6.2607E-08	6.2530E-08	0.12
ET1	6.2196E-06	6.2190E-06	0.01
ET2	7.3459E-06	7.3480E-06	-0.03
LN(ET)	2.0774E-07	2.0770E-07	0.02
BBsec	4.8032E-05	4.8130E-05	-0.20
BBbas	3.3867E-06	3.3940E-06	-0.22
bb	1.9476E-05	1.9430E-05	0.24
AI	4.7895E-06	4.7900E-06	-0.01
LN(TH)	1.0252E-06	1.0250E-06	0.02
ESOPHAGUS	4.8584E-08	4.8520E-08	0.13
REMAINDER	**8.4958E-08**	**8.4910E-08**	**0.06**
C.E.D.	**2.1500E-06**	**2.1530E-06**	**-0.14**
Maximum			**0.24**

C.10.64.3. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.4702E-08	5.4620E-08	0.15
URIN BLADDER	5.4827E-08	5.4740E-08	0.16
BRAIN	5.4702E-08	5.4620E-08	0.15
BREAST	5.4702E-08	5.4620E-08	0.15
GALL BLADDER	5.4702E-08	N/A	N/A
HEART	5.4702E-08	N/A	N/A
KIDNEYS	2.5005E-06	2.5000E-06	0.02
LIVER	1.2916E-06	1.2920E-06	-0.03
MUSCLE	5.4702E-08	5.4620E-08	0.15
OVARIES	5.4702E-08	5.4620E-08	0.15
PANCREAS	5.4702E-08	5.4620E-08	0.15
TESTES	5.4702E-08	5.4620E-08	0.15
THYROID	5.4702E-08	5.4620E-08	0.15
R.B.M.	5.1697E-07	5.1690E-07	0.01
BONE SURFACE	3.1242E-07	3.1230E-07	0.04
STOMACH	5.5923E-08	5.5840E-08	0.15
S.I.	5.7446E-08	5.7360E-08	0.15
U.L.I.	7.2163E-08	7.2080E-08	0.12
L.L.I.	1.0567E-07	1.0560E-07	0.07
SKIN	5.4702E-08	5.4620E-08	0.15
SPLEEN	2.1523E-06	2.1520E-06	0.01
THYMUS	5.4702E-08	5.4620E-08	0.15

UTERUS	5.4702E-08	5.4620E-08	0.15
ET	5.4702E-08	5.4620E-08	0.15
LUNG	5.4702E-08	5.4670E-08	0.06
COLON	8.6654E-08	8.6560E-08	0.11
ET1	5.4702E-08	5.4620E-08	0.15
ET2	5.4702E-08	5.4620E-08	0.15
LN(ET)	5.4702E-08	5.4620E-08	0.15
BBsec	5.4702E-08	5.4620E-08	0.15
BBbas	5.4702E-08	5.4620E-08	0.15
bb	5.4702E-08	5.4620E-08	0.15
AI	5.4702E-08	5.4620E-08	0.15
LN(TH)	5.4702E-08	5.4620E-08	0.15
ESOPHAGUS	5.4702E-08	5.4620E-08	0.15
REMAINDER	**1.2838E-06**	**1.2840E-06**	**-0.02**
C.E.D.	**2.4004E-07**	**2.4000E-07**	**0.02**
Maximum			**0.16**

C.10.65. ^{143}Pr – Praseodymium-143

Maximum difference in ***Effective Dose***: **-0.28%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.39%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **±0.06%**.

C.10.65.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.31E-13	7.31E-13	0.01
URIN BLADDER	3.93E-12	3.93E-12	0.00
BRAIN	7.31E-13	7.31E-13	0.01
BREAST	7.31E-13	7.31E-13	0.01
GALL BLADDER	7.31E-13	N/A	N/A
HEART	7.31E-13	N/A	N/A
KIDNEYS	1.88E-10	1.88E-10	0.00
LIVER	9.10E-10	9.10E-10	0.00
MUSCLE	7.31E-13	7.31E-13	0.01
OVARIES	7.32E-13	7.31E-13	0.01
PANCREAS	7.31E-13	7.31E-13	0.01
TESTES	7.31E-13	7.31E-13	0.01
THYROID	7.31E-13	7.31E-13	0.01
R.B.M.	1.14E-10	1.14E-10	-0.01
BONE SURFACE	1.14E-10	1.14E-10	-0.01
STOMACH	1.46E-10	1.46E-10	-0.03
S.I.	3.61E-10	3.61E-10	0.00
U.L.I.	2.13E-09	2.13E-09	-0.02
L.L.I.	5.95E-09	5.95E-09	0.01
SKIN	7.31E-13	7.31E-13	0.01
SPLEEN	7.31E-13	7.31E-13	0.01
THYMUS	7.31E-13	7.31E-13	0.01
UTERUS	7.31E-13	7.31E-13	0.01
ET	3.28E-09	3.28E-09	0.00
LUNG	1.16E-08	1.17E-08	-0.39
COLON	3.78E-09	3.78E-09	0.06
ET1	1.78E-06	1.78E-06	-0.01
ET2	1.51E-09	1.51E-09	0.01
LN(ET)	1.70E-11	1.70E-11	-0.03
BBsec	2.85E-08	2.85E-08	-0.22
BBbas	2.41E-08	2.42E-08	-0.19
bb	5.53E-09	5.52E-09	0.13
AI	3.08E-09	3.08E-09	-0.02
LN(TH)	7.61E-11	7.61E-11	-0.02
ESOPHAGUS	7.31E-13	7.31E-13	0.01
REMAINDER	**1.17E-11**	**1.17E-11**	**-0.06**
C.E.D.	**1.93E-09**	**1.93E-09**	**-0.23**
Maximum			**-0.39**

C.10.65.2. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.34E-14	1.34E-14	0.01
URIN BLADDER	7.18E-14	7.18E-14	-0.01
BRAIN	1.34E-14	1.34E-14	0.00
BREAST	1.34E-14	1.34E-14	0.01
GALL BLADDER	1.34E-14	N/A	N/A
HEART	1.34E-14	N/A	N/A
KIDNEYS	3.44E-12	3.44E-12	0.01
LIVER	1.66E-11	1.66E-11	0.01
MUSCLE	1.34E-14	1.34E-14	0.01
OVARIES	1.34E-14	1.34E-14	0.02
PANCREAS	1.34E-14	1.34E-14	0.01
TESTES	1.34E-14	1.34E-14	0.00
THYROID	1.34E-14	1.34E-14	0.00
R.B.M.	2.09E-12	2.09E-12	0.00
BONE SURFACE	2.09E-12	2.09E-12	0.00
STOMACH	1.54E-10	1.54E-10	-0.01
S.I.	3.81E-10	3.81E-10	-0.01
U.L.I.	2.24E-09	2.24E-09	0.01
L.L.I.	6.25E-09	6.25E-09	0.00
SKIN	1.34E-14	1.34E-14	0.00
SPLEEN	1.34E-14	1.34E-14	0.01
THYMUS	1.34E-14	1.34E-14	0.01
UTERUS	1.34E-14	1.34E-14	0.01
ET	3.49E-09	3.49E-09	-0.01
LUNG	1.37E-08	1.38E-08	-0.34
COLON	3.98E-09	3.97E-09	0.03
ET1	1.78E-06	1.78E-06	-0.01
ET2	1.72E-09	1.72E-09	0.00
LN(ET)	2.16E-11	2.17E-11	-0.01
BBsec	3.35E-08	3.36E-08	-0.21
BBbas	2.84E-08	2.85E-08	-0.21
bb	6.58E-09	6.57E-09	0.12
AI	3.71E-09	3.71E-09	-0.01
LN(TH)	9.91E-11	9.91E-11	-0.02
ESOPHAGUS	1.34E-14	1.34E-14	0.01
REMAINDER	**9.67E-12**	**9.67E-12**	**-0.06**
C.E.D.	**2.15E-09**	**2.15E-09**	**-0.28**
Maximum			**-0.34**

C.10.65.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.10E-14	1.10E-14	0.05
URIN BLADDER	5.92E-14	5.92E-14	0.01
BRAIN	1.10E-14	1.10E-14	0.05
BREAST	1.10E-14	1.10E-14	0.05
GALL BLADDER	1.10E-14	N/A	N/A
HEART	1.10E-14	N/A	N/A
KIDNEYS	2.84E-12	2.84E-12	0.02
LIVER	1.37E-11	1.37E-11	-0.01
MUSCLE	1.10E-14	1.10E-14	0.05
OVARIES	1.10E-14	1.10E-14	0.04
PANCREAS	1.10E-14	1.10E-14	0.05
TESTES	1.10E-14	1.10E-14	0.05
THYROID	1.10E-14	1.10E-14	0.05
R.B.M.	1.72E-12	1.72E-12	0.03
BONE SURFACE	1.72E-12	1.72E-12	0.03
STOMACH	3.61E-10	3.61E-10	-0.01
S.I.	8.95E-10	8.95E-10	0.00
U.L.I.	5.27E-09	5.27E-09	0.00
L.L.I.	1.47E-08	1.47E-08	0.03
SKIN	1.10E-14	1.10E-14	0.05
SPLEEN	1.10E-14	1.10E-14	0.05
THYMUS	1.10E-14	1.10E-14	0.05
UTERUS	1.10E-14	1.10E-14	-0.01
ET	1.10E-14	1.10E-14	0.05
LUNG	1.10E-14	1.10E-14	-0.05
COLON	9.35E-09	9.34E-09	0.04
ET1	1.10E-14	1.10E-14	0.05
ET2	1.10E-14	1.10E-14	0.05
LN(ET)	1.10E-14	1.10E-14	0.05
BBsec	1.10E-14	1.10E-14	0.05
BBbas	1.10E-14	1.10E-14	0.05
bb	1.10E-14	1.10E-14	0.05
AI	1.10E-14	1.10E-14	0.05
LN(TH)	1.10E-14	1.10E-14	0.05
ESOPHAGUS	1.10E-14	1.10E-14	0.05
REMAINDER	**1.87E-11**	**1.87E-11**	**-0.05**
C.E.D.	**1.17E-09**	**1.17E-09**	**0.09**
Maximum			**0.09**

C.10.66. ^{147}Pr – Praseodymium-147

Maximum difference in ***Effective Dose***: **-0.09%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.38%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.09%**.

C.10.66.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.34E-13	6.34E-13	-0.01
URIN BLADDER	2.17E-13	2.17E-13	0.00
BRAIN	6.03E-13	6.03E-13	0.00
BREAST	4.43E-13	4.43E-13	-0.02
GALL BLADDER	6.78E-13	N/A	N/A
HEART	7.93E-13	N/A	N/A
KIDNEYS	6.78E-13	6.78E-13	-0.01
LIVER	1.26E-12	1.26E-12	-0.02
MUSCLE	7.35E-13	7.36E-13	-0.01
OVARIES	5.60E-13	5.60E-13	-0.01
PANCREAS	1.68E-12	1.68E-12	-0.04
TESTES	8.92E-14	8.93E-14	-0.01
THYROID	6.60E-13	6.60E-13	0.00
R.B.M.	7.08E-13	7.08E-13	0.00
BONE SURFACE	1.19E-12	1.19E-12	0.02
STOMACH	5.62E-11	5.62E-11	-0.02
S.I.	1.08E-11	1.08E-11	-0.01
U.L.I.	4.04E-12	4.04E-12	-0.01
L.L.I.	4.90E-12	4.91E-12	-0.02
SKIN	3.49E-13	3.49E-13	-0.01
SPLEEN	1.11E-12	1.11E-12	-0.01
THYMUS	8.92E-13	8.92E-13	-0.01
UTERUS	4.59E-13	4.59E-13	-0.02
ET	5.93E-10	5.93E-10	0.00
LUNG	5.19E-11	5.21E-11	-0.38
COLON	4.41E-12	4.41E-12	-0.02
ET1	3.04E-08	3.04E-08	0.00
ET2	5.63E-10	5.63E-10	0.00
LN(ET)	1.41E-10	1.41E-10	0.03
BBsec	1.33E-10	1.34E-10	-0.20
BBbas	1.08E-10	1.08E-10	-0.17
bb	2.52E-11	2.52E-11	0.14
AI	1.01E-11	1.01E-11	-0.04
LN(TH)	1.31E-12	1.31E-12	0.02
ESOPHAGUS	8.92E-13	8.92E-13	-0.01
REMAINDER	**2.97E-10**	**2.97E-10**	**-0.01**
C.E.D.	**2.87E-11**	**2.88E-11**	**-0.09**
Maximum			**-0.38**

C.10.66.2. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.84E-13	5.84E-13	-0.01
URIN BLADDER	1.39E-13	1.40E-13	-0.01
BRAIN	5.54E-13	5.54E-13	-0.01
BREAST	4.04E-13	4.04E-13	-0.02
GALL BLADDER	6.16E-13	N/A	N/A
HEART	7.59E-13	N/A	N/A
KIDNEYS	4.83E-13	4.83E-13	-0.02
LIVER	4.31E-13	4.31E-13	-0.01
MUSCLE	6.93E-13	6.93E-13	-0.01
OVARIES	5.16E-13	5.16E-13	-0.02
PANCREAS	1.67E-12	1.67E-12	-0.02
TESTES	3.38E-14	3.38E-14	-0.01
THYROID	6.12E-13	6.12E-13	-0.01
R.B.M.	5.69E-13	5.69E-13	-0.01
BONE SURFACE	6.53E-13	6.53E-13	-0.01
STOMACH	5.83E-11	5.83E-11	-0.02
S.I.	1.11E-11	1.11E-11	-0.06
U.L.I.	4.13E-12	4.13E-12	-0.02
L.L.I.	5.08E-12	5.09E-12	-0.02
SKIN	3.03E-13	3.03E-13	-0.02

SPLEEN	1.09E-12	1.09E-12	-0.05
THYMUS	8.54E-13	8.54E-13	0.00
UTERUS	4.11E-13	4.11E-13	0.00
ET	6.10E-10	6.11E-10	0.00
LUNG	5.60E-11	5.62E-11	-0.37
COLON	4.54E-12	4.54E-12	-0.01
ET1	3.04E-08	3.04E-08	0.00
ET2	5.81E-10	5.81E-10	0.00
LN(ET)	1.43E-10	1.43E-10	0.00
BBsec	1.44E-10	1.44E-10	-0.17
BBbas	1.16E-10	1.16E-10	-0.21
bb	2.74E-11	2.74E-11	0.13
AI	1.10E-11	1.10E-11	-0.05
LN(TH)	1.42E-12	1.42E-12	-0.04
ESOPHAGUS	8.54E-13	8.54E-13	0.00
REMAINDER	**3.06E-10**	**3.06E-10**	**0.00**
C.E.D.	**2.98E-11**	**2.99E-11**	**-0.08**
Maximum			**-0.37**

C.10.66.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.66E-12	1.66E-12	-0.01
URIN BLADDER	5.40E-13	5.40E-13	-0.01
BRAIN	1.07E-14	1.07E-14	-0.05
BREAST	4.06E-13	4.06E-13	-0.01
GALL BLADDER	2.31E-12	N/A	N/A
HEART	1.30E-12	N/A	N/A
KIDNEYS	1.73E-12	1.73E-12	0.01
LIVER	1.01E-12	1.01E-12	0.04
MUSCLE	7.75E-13	7.76E-13	-0.01
OVARIES	2.06E-12	2.06E-12	0.00
PANCREAS	6.55E-12	6.55E-12	0.00
TESTES	1.24E-13	1.24E-13	-0.04
THYROID	4.40E-14	4.40E-14	0.00
R.B.M.	7.87E-13	7.87E-13	-0.01
BONE SURFACE	4.92E-13	4.92E-13	-0.01
STOMACH	2.52E-10	2.52E-10	0.00
S.I.	4.74E-11	4.74E-11	-0.02
U.L.I.	1.44E-11	1.44E-11	0.01
L.L.I.	1.28E-11	1.28E-11	-0.04
SKIN	3.12E-13	3.12E-13	-0.02
SPLEEN	4.05E-12	4.05E-12	-0.01
THYMUS	2.99E-13	2.99E-13	0.00
UTERUS	1.68E-12	1.68E-12	-0.04
ET	4.40E-14	4.40E-14	0.00
LUNG	6.52E-13	6.52E-13	-0.10
COLON	1.37E-11	1.37E-11	-0.03
ET1	4.40E-14	4.40E-14	0.00
ET2	4.40E-14	4.40E-14	0.00
LN(ET)	4.40E-14	4.40E-14	0.00
BBsec	6.52E-13	6.52E-13	-0.01
BBbas	6.52E-13	6.52E-13	-0.01
bb	6.52E-13	6.52E-13	-0.01
AI	6.52E-13	6.52E-13	-0.01
LN(TH)	6.52E-13	6.52E-13	-0.01
ESOPHAGUS	2.99E-13	2.99E-13	0.00
REMAINDER	**1.76E-12**	**1.76E-12**	**-0.09**
C.E.D.	**3.27E-11**	**3.27E-11**	**0.00**
Maximum			**-0.10**

C.10.67. ^{238}Pu – Plutonium-238

Maximum difference in ***Effective Dose***: **-0.07%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **+0.18%** (Ingestion – f_1 = 0.0005 – Remainder).
Maximum difference excluding ***Respiratory Tract***: **+0.18%**.

C.10.67.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.5530E-06	1.5510E-06	0.13
URIN BLADDER	1.5530E-06	1.5510E-06	0.13
BRAIN	1.5530E-06	1.5510E-06	0.13
BREAST	1.5530E-06	1.5510E-06	0.13
GALL BLADDER	1.5531E-06	N/A	N/A
HEART	1.5530E-06	N/A	N/A
KIDNEYS	3.8649E-06	3.8650E-06	0.00
LIVER	1.8819E-04	1.8830E-04	-0.06
MUSCLE	1.5530E-06	1.5510E-06	0.13
OVARIES	1.1710E-05	1.1710E-05	0.00
PANCREAS	1.5530E-06	1.5510E-06	0.13
TESTES	1.1935E-05	1.1930E-05	0.04
THYROID	1.5530E-06	1.5510E-06	0.13
R.B.M.	4.4722E-05	4.4730E-05	-0.02
BONE SURFACE	9.0558E-04	9.0580E-04	-0.02
STOMACH	1.5535E-06	1.5510E-06	0.16
S.I.	1.5543E-06	1.5520E-06	0.15
U.L.I.	1.5612E-06	1.5590E-06	0.14
L.L.I.	1.5772E-06	1.5750E-06	0.14
SKIN	1.5530E-06	1.5510E-06	0.13
SPLEEN	1.5530E-06	1.5510E-06	0.13
THYMUS	1.5530E-06	1.5510E-06	0.13
UTERUS	1.5530E-06	1.5510E-06	0.13
ET	1.5146E-05	1.5150E-05	-0.03
LUNG	2.3469E-05	2.3510E-05	-0.17
COLON	1.5681E-06	1.5660E-06	0.13
ET1	3.1583E-05	3.1580E-05	0.01
ET2	1.5143E-05	1.5140E-05	0.02
LN(ET)	2.1539E-06	2.1520E-06	0.09
BBsec	6.3578E-05	6.3710E-05	-0.21
BBbas	7.7884E-06	7.8000E-06	-0.15
bb	2.4572E-05	2.4520E-05	0.21
AI	1.0209E-05	1.0210E-05	-0.01
LN(TH)	4.3600E-06	4.3590E-06	0.02
ESOPHAGUS	1.5530E-06	1.5510E-06	0.13
REMAINDER	**1.5830E-06**	**1.5810E-06**	**0.13**
C.E.D.	**2.9815E-05**	**2.9830E-05**	**-0.05**
Maximum			**0.21**

C.10.67.2. Acute Inhalation (Type S: f_1 = 0.00001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.3400E-07	1.3380E-07	0.15
URIN BLADDER	1.3400E-07	1.3380E-07	0.15

BRAIN	1.3399E-07	1.3380E-07	0.14
BREAST	1.3399E-07	1.3380E-07	0.14
GALL BLADDER	1.3401E-07	N/A	N/A
HEART	1.3400E-07	N/A	N/A
KIDNEYS	3.5299E-07	3.5300E-07	0.00
LIVER	1.6652E-05	1.6660E-05	-0.05
MUSCLE	1.3400E-07	1.3380E-07	0.15
OVARIES	1.0327E-06	1.0330E-06	-0.03
PANCREAS	1.3399E-07	1.3380E-07	0.14
TESTES	1.0526E-06	1.0520E-06	0.06
THYROID	1.3399E-07	1.3380E-07	0.14
R.B.M.	4.0575E-06	4.0590E-06	-0.04
BONE SURFACE	7.9509E-05	7.9540E-05	-0.04
STOMACH	1.3460E-07	1.3440E-07	0.15
S.I.	1.3551E-07	1.3530E-07	0.16
U.L.I.	1.4316E-07	1.4300E-07	0.11
L.L.I.	1.6089E-07	1.6070E-07	0.12
SKIN	1.3399E-07	1.3380E-07	0.14
SPLEEN	1.3399E-07	1.3380E-07	0.14
THYMUS	1.3399E-07	1.3380E-07	0.14
UTERUS	1.3399E-07	1.3380E-07	0.14
ET	8.1106E-05	8.1130E-05	-0.03
LUNG	5.0872E-05	5.0930E-05	-0.11
COLON	1.5083E-07	1.5060E-07	0.15
ET1	3.0165E-05	3.0160E-05	0.02
ET2	8.1108E-05	8.1130E-05	-0.03
LN(ET)	1.2991E-04	1.3000E-04	-0.07
BBsec	8.1243E-05	8.1410E-05	-0.21
BBbas	9.4931E-06	9.5130E-06	-0.21
bb	3.5691E-05	3.5620E-05	0.20
AI	7.0396E-05	7.0410E-05	-0.02
LN(TH)	4.3754E-04	4.3770E-04	-0.04
ESOPHAGUS	1.3399E-07	1.3380E-07	0.14
REMAINDER	**4.0621E-05**	**4.0630E-05**	**-0.02**
C.E.D.	**1.0523E-05**	**1.0530E-05**	**-0.07**
Maximum			**-0.21**

C.10.67.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.2677E-08	1.2660E-08	0.13
URIN BLADDER	1.2677E-08	1.2660E-08	0.13
BRAIN	1.2677E-08	1.2660E-08	0.13
BREAST	1.2676E-08	1.2660E-08	0.13
GALL BLADDER	1.2678E-08	N/A	N/A
HEART	1.2676E-08	N/A	N/A
KIDNEYS	3.1485E-08	3.1490E-08	-0.02
LIVER	1.5343E-06	1.5350E-06	-0.05
MUSCLE	1.2677E-08	1.2660E-08	0.13
OVARIES	9.5476E-08	9.5470E-08	0.01
PANCREAS	1.2677E-08	1.2660E-08	0.13
TESTES	9.7309E-08	9.7300E-08	0.01
THYROID	1.2676E-08	1.2660E-08	0.13
R.B.M.	3.6437E-07	3.6440E-07	-0.01
BONE SURFACE	7.3853E-06	7.3860E-06	-0.01
STOMACH	1.3954E-08	1.3930E-08	0.17
S.I.	1.5869E-08	1.5850E-08	0.12
U.L.I.	3.1995E-08	3.1980E-08	0.05
L.L.I.	6.9349E-08	6.9330E-08	0.03
SKIN	1.2676E-08	1.2660E-08	0.13
SPLEEN	1.2676E-08	1.2660E-08	0.13
THYMUS	1.2676E-08	1.2660E-08	0.13
UTERUS	1.2676E-08	1.2660E-08	0.13
ET	1.2676E-08	1.2660E-08	0.13
LUNG	1.2677E-08	1.2670E-08	0.06
COLON	4.8148E-08	4.8110E-08	0.08
ET1	1.2676E-08	1.2660E-08	0.13
ET2	1.2676E-08	1.2660E-08	0.13
LN(ET)	1.2676E-08	1.2660E-08	0.13
BBsec	1.2677E-08	1.2660E-08	0.13
BBbas	1.2677E-08	1.2660E-08	0.13
bb	1.2677E-08	1.2660E-08	0.13
AI	1.2677E-08	1.2660E-08	0.13
LN(TH)	1.2677E-08	1.2660E-08	0.13
ESOPHAGUS	1.2676E-08	1.2660E-08	0.13
REMAINDER	**1.2933E-08**	**1.2910E-08**	**0.18**
C.E.D.	**2.2604E-07**	**2.2610E-07**	**-0.03**
Maximum			**0.18**

C.10.67.4. Acute Ingestion (f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.5353E-09	2.5310E-09	0.17
URIN BLADDER	2.5355E-09	2.5310E-09	0.18
BRAIN	2.5353E-09	2.5310E-09	0.17
BREAST	2.5353E-09	2.5310E-09	0.17
GALL BLADDER	2.5357E-09	N/A	N/A
HEART	2.5353E-09	N/A	N/A
KIDNEYS	6.2970E-09	6.2970E-09	0.00
LIVER	3.0685E-07	3.0690E-07	-0.02
MUSCLE	2.5354E-09	2.5310E-09	0.17
OVARIES	1.9097E-08	1.9100E-08	-0.02
PANCREAS	2.5353E-09	2.5310E-09	0.17
TESTES	1.9462E-08	1.9460E-08	0.01
THYROID	2.5353E-09	2.5310E-09	0.17
R.B.M.	7.2874E-08	7.2880E-08	-0.01
BONE SURFACE	1.4770E-06	1.4770E-06	0.00
STOMACH	3.8125E-09	3.8090E-09	0.09
S.I.	5.7288E-09	5.7250E-09	0.07
U.L.I.	2.1861E-08	2.1860E-08	0.00
L.L.I.	5.9228E-08	5.9220E-08	0.01
SKIN	2.5353E-09	2.5310E-09	0.17
SPLEEN	2.5353E-09	2.5310E-09	0.17
THYMUS	2.5353E-09	2.5310E-09	0.17
UTERUS	2.5353E-09	2.5310E-09	0.17
ET	2.5353E-09	2.5310E-09	0.17
LUNG	2.5353E-09	2.5340E-09	0.05
COLON	3.8019E-08	3.8000E-08	0.05
ET1	2.5353E-09	2.5310E-09	0.17
ET2	2.5353E-09	2.5310E-09	0.17
LN(ET)	2.5353E-09	2.5310E-09	0.17
BBsec	2.5353E-09	2.5310E-09	0.17
BBbas	2.5353E-09	2.5310E-09	0.17
bb	2.5353E-09	2.5310E-09	0.17
AI	2.5353E-09	2.5310E-09	0.17
LN(TH)	2.5353E-09	2.5310E-09	0.17
ESOPHAGUS	2.5353E-09	2.5310E-09	0.17
REMAINDER	**2.6397E-09**	**2.6360E-09**	**0.14**
C.E.D.	**4.8738E-08**	**4.8740E-08**	**0.00**
Maximum			**0.18**

C.10.67.5. Acute Ingestion (f_1 = 0.00001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.5354E-10	2.5310E-10	0.17
URIN BLADDER	2.5362E-10	2.5320E-10	0.17
BRAIN	2.5353E-10	2.5310E-10	0.17

BREAST	2.5353E-10	2.5310E-10	0.17
GALL BLADDER	2.5373E-10	N/A	N/A
HEART	2.5353E-10	N/A	N/A
KIDNEYS	6.2971E-10	6.2970E-10	0.00
LIVER	3.0685E-08	3.0690E-08	-0.02
MUSCLE	2.5362E-10	2.5320E-10	0.17
OVARIES	1.9119E-09	1.9120E-09	-0.01
PANCREAS	2.5356E-10	2.5320E-10	0.14
TESTES	1.9462E-09	1.9460E-09	0.01
THYROID	2.5353E-10	2.5310E-10	0.17
R.B.M.	7.2875E-09	7.2880E-09	-0.01
BONE SURFACE	1.4770E-07	1.4770E-07	0.00
STOMACH	1.5308E-09	1.5300E-09	0.05
S.I.	3.4473E-09	3.4470E-09	0.01
U.L.I.	1.9581E-08	1.9580E-08	0.01
L.L.I.	5.6950E-08	5.6950E-08	0.00
SKIN	2.5353E-10	2.5310E-10	0.17
SPLEEN	2.5353E-10	2.5310E-10	0.17
THYMUS	2.5353E-10	2.5310E-10	0.17
UTERUS	2.5361E-10	2.5320E-10	0.16
ET	2.5353E-10	2.5310E-10	0.17
LUNG	2.5353E-10	2.5340E-10	0.05
COLON	3.5741E-08	3.5720E-08	0.06
ET1	2.5353E-10	2.5310E-10	0.17
ET2	2.5353E-10	2.5310E-10	0.17
LN(ET)	2.5353E-10	2.5310E-10	0.17
BBsec	2.5353E-10	2.5310E-10	0.17
BBbas	2.5353E-10	2.5310E-10	0.17
bb	2.5353E-10	2.5310E-10	0.17
AI	2.5353E-10	2.5310E-10	0.17
LN(TH)	2.5353E-10	2.5310E-10	0.17
ESOPHAGUS	2.5353E-10	2.5310E-10	0.17
REMAINDER	**3.2386E-10**	**3.2350E-10**	**0.11**
C.E.D.	**8.8475E-09**	**8.8460E-09**	**0.02**
Maximum			**0.17**

C.10.68. ^{239}Pu – Plutonium-239

Maximum difference in ***Effective Dose***: **-0.06%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **+0.18%** (Inhalation – type "S" – U.L.I.).
Maximum difference excluding ***Respiratory Tract***: **+0.18%**.

C.10.68.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.7486E-06	1.7460E-06	0.15
URIN BLADDER	1.7487E-06	1.7460E-06	0.15
BRAIN	1.7486E-06	1.7460E-06	0.15
BREAST	1.7486E-06	1.7460E-06	0.15
GALL BLADDER	1.7486E-06	N/A	N/A
HEART	1.7486E-06	N/A	N/A
KIDNEYS	4.0897E-06	4.0900E-06	-0.01
LIVER	2.0868E-04	2.0870E-04	-0.01
MUSCLE	1.7486E-06	1.7460E-06	0.15
OVARIES	1.3029E-05	1.3030E-05	-0.01
PANCREAS	1.7486E-06	1.7460E-06	0.15
TESTES	1.3280E-05	1.3280E-05	0.00
THYROID	1.7486E-06	1.7460E-06	0.15
R.B.M.	4.7950E-05	4.7960E-05	-0.02
BONE SURFACE	1.0091E-03	1.0090E-03	0.01
STOMACH	1.7491E-06	1.7460E-06	0.18
S.I.	1.7498E-06	1.7470E-06	0.16
U.L.I.	1.7563E-06	1.7540E-06	0.13
L.L.I.	1.7713E-06	1.7690E-06	0.13
SKIN	1.7486E-06	1.7460E-06	0.15
SPLEEN	1.7486E-06	1.7460E-06	0.15
THYMUS	1.7486E-06	1.7460E-06	0.15
UTERUS	1.7486E-06	1.7460E-06	0.15
ET	1.4888E-05	1.4890E-05	-0.01
LUNG	2.0712E-05	2.0740E-05	-0.14
COLON	1.7628E-06	1.7600E-06	0.16
ET1	3.1968E-06	3.1940E-06	0.09
ET2	1.4912E-05	1.4910E-05	0.01
LN(ET)	2.3168E-06	2.3140E-06	0.12
BBsec	5.1523E-05	5.1630E-05	-0.21
BBbas	5.3225E-06	5.3270E-06	-0.08
bb	2.3864E-05	2.3810E-05	0.23
AI	9.8979E-06	9.8960E-06	0.02
LN(TH)	4.3985E-06	4.3970E-06	0.03
ESOPHAGUS	1.7486E-06	1.7460E-06	0.15
REMAINDER	**1.7786E-06**	**1.7760E-06**	**0.15**
C.E.D.	**3.2298E-05**	**3.2300E-05**	**-0.01**
Maximum			**0.23**

C.10.68.2. Acute Inhalation (Type S: f_1 = 0.00001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.5401E-07	1.5380E-07	0.14
URIN BLADDER	1.5401E-07	1.5380E-07	0.14
BRAIN	1.5400E-07	1.5380E-07	0.13
BREAST	1.5401E-07	1.5380E-07	0.14
GALL BLADDER	1.5401E-07	N/A	N/A
HEART	1.5401E-07	N/A	N/A
KIDNEYS	3.8576E-07	3.8580E-07	-0.01
LIVER	1.8959E-05	1.8960E-05	-0.01
MUSCLE	1.5401E-07	1.5380E-07	0.14
OVARIES	1.1791E-06	1.1790E-06	0.01
PANCREAS	1.5400E-07	1.5380E-07	0.13
TESTES	1.2017E-06	1.2020E-06	-0.02
THYROID	1.5400E-07	1.5380E-07	0.13
R.B.M.	4.4878E-06	4.4890E-06	-0.03
BONE SURFACE	9.0794E-05	9.0820E-05	-0.03
STOMACH	1.5457E-07	1.5430E-07	0.17
S.I.	1.5542E-07	1.5520E-07	0.14
U.L.I.	1.6259E-07	1.6230E-07	0.18
L.L.I.	1.7920E-07	1.7900E-07	0.11
SKIN	1.5400E-07	1.5380E-07	0.13
SPLEEN	1.5401E-07	1.5380E-07	0.14
THYMUS	1.5400E-07	1.5380E-07	0.13
UTERUS	1.5400E-07	1.5380E-07	0.13
ET	7.9830E-05	7.9850E-05	-0.03
LUNG	4.6518E-05	4.6560E-05	-0.09
COLON	1.6978E-07	1.6950E-07	0.17
ET1	1.6027E-06	1.6020E-06	0.04
ET2	7.9847E-05	7.9870E-05	-0.03

LN(ET)	1.4156E-04	1.4160E-04	-0.03
BBsec	6.5165E-05	6.5300E-05	-0.21
BBbas	5.9570E-06	5.9690E-06	-0.20
bb	3.3294E-05	3.3230E-05	0.19
AI	6.9373E-05	6.9380E-05	-0.01
LN(TH)	4.8803E-04	4.8810E-04	-0.01
ESOPHAGUS	1.5400E-07	1.5380E-07	0.13
REMAINDER	**1.9523E-07**	**1.9500E-07**	**0.12**
C.E.D.	**8.2980E-06**	**8.3030E-06**	**-0.06**
Maximum			**-0.21**

C.10.68.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.4260E-08	1.4240E-08	0.14
URIN BLADDER	1.4261E-08	1.4240E-08	0.15
BRAIN	1.4260E-08	1.4240E-08	0.14
BREAST	1.4260E-08	1.4240E-08	0.14
GALL BLADDER	1.4261E-08	N/A	N/A
HEART	1.4260E-08	N/A	N/A
KIDNEYS	3.3275E-08	3.3270E-08	0.02
LIVER	1.6993E-06	1.7000E-06	-0.04
MUSCLE	1.4260E-08	1.4240E-08	0.14
OVARIES	1.0611E-07	1.0610E-07	0.01
PANCREAS	1.4260E-08	1.4240E-08	0.14
TESTES	1.0815E-07	1.0810E-07	0.05
THYROID	1.4260E-08	1.4240E-08	0.14
R.B.M.	3.9019E-07	3.9020E-07	0.00
BONE SURFACE	8.2205E-06	8.2200E-06	0.01
STOMACH	1.5454E-08	1.5430E-08	0.16
S.I.	1.7245E-08	1.7220E-08	0.15
U.L.I.	3.2326E-08	3.2300E-08	0.08
L.L.I.	6.7262E-08	6.7240E-08	0.03
SKIN	1.4260E-08	1.4240E-08	0.14
SPLEEN	1.4260E-08	1.4240E-08	0.14
THYMUS	1.4260E-08	1.4240E-08	0.14
UTERUS	1.4260E-08	1.4240E-08	0.14
ET	1.4260E-08	1.4240E-08	0.14
LUNG	1.4260E-08	1.4250E-08	0.07
COLON	4.7434E-08	4.7400E-08	0.07
ET1	1.4260E-08	1.4240E-08	0.14
ET2	1.4260E-08	1.4240E-08	0.14
LN(ET)	1.4260E-08	1.4240E-08	0.14
BBsec	1.4260E-08	1.4240E-08	0.14
BBbas	1.4260E-08	1.4240E-08	0.14
bb	1.4260E-08	1.4240E-08	0.14
AI	1.4260E-08	1.4240E-08	0.14
LN(TH)	1.4260E-08	1.4240E-08	0.14
ESOPHAGUS	1.4260E-08	1.4240E-08	0.14
REMAINDER	**1.4514E-08**	**1.4490E-08**	**0.17**
C.E.D.	**2.4860E-07**	**2.4860E-07**	**0.00**
Maximum			**0.17**

C.10.68.4. Acute Ingestion (f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.8519E-09	2.8470E-09	0.17
URIN BLADDER	2.8521E-09	2.8480E-09	0.14
BRAIN	2.8519E-09	2.8470E-09	0.17
BREAST	2.8519E-09	2.8470E-09	0.17
GALL BLADDER	2.8521E-09	N/A	N/A
HEART	2.8519E-09	N/A	N/A
KIDNEYS	6.6551E-09	6.6550E-09	0.00
LIVER	3.3985E-07	3.3990E-07	-0.01
MUSCLE	2.8519E-09	2.8470E-09	0.17
OVARIES	2.1223E-08	2.1220E-08	0.01
PANCREAS	2.8519E-09	2.8470E-09	0.17
TESTES	2.1630E-08	2.1630E-08	0.00
THYROID	2.8519E-09	2.8470E-09	0.17
R.B.M.	7.8038E-08	7.8050E-08	-0.02
BONE SURFACE	1.6441E-06	1.6440E-06	0.01
STOMACH	4.0462E-09	4.0420E-09	0.10
S.I.	5.8379E-09	5.8330E-09	0.08
U.L.I.	2.0925E-08	2.0920E-08	0.02
L.L.I.	5.5872E-08	5.5870E-08	0.00
SKIN	2.8519E-09	2.8470E-09	0.17
SPLEEN	2.8519E-09	2.8470E-09	0.17
THYMUS	2.8519E-09	2.8470E-09	0.17
UTERUS	2.8519E-09	2.8470E-09	0.17
ET	2.8519E-09	2.8470E-09	0.17
LUNG	2.8519E-09	2.8500E-09	0.07
COLON	3.6037E-08	3.6020E-08	0.05
ET1	2.8519E-09	2.8470E-09	0.17
ET2	2.8519E-09	2.8470E-09	0.17
LN(ET)	2.8519E-09	2.8470E-09	0.17
BBsec	2.8519E-09	2.8470E-09	0.17
BBbas	2.8519E-09	2.8470E-09	0.17
bb	2.8519E-09	2.8470E-09	0.17
AI	2.8519E-09	2.8470E-09	0.17
LN(TH)	2.8519E-09	2.8470E-09	0.17
ESOPHAGUS	2.8519E-09	2.8470E-09	0.17
REMAINDER	**2.9524E-09**	**2.9480E-09**	**0.15**
C.E.D.	**5.3023E-08**	**5.3020E-08**	**0.01**
Maximum			**0.17**

C.10.68.5. Acute Ingestion (f_1 = 0.00001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.8519E-10	2.8470E-10	0.17
URIN BLADDER	2.8525E-10	2.8480E-10	0.16
BRAIN	2.8519E-10	2.8470E-10	0.17
BREAST	2.8519E-10	2.8470E-10	0.17
GALL BLADDER	2.8528E-10	N/A	N/A
HEART	2.8519E-10	N/A	N/A
KIDNEYS	6.6552E-10	6.6550E-10	0.00
LIVER	3.3985E-08	3.3990E-08	-0.01
MUSCLE	2.8523E-10	2.8480E-10	0.15
OVARIES	2.1232E-09	2.1230E-09	0.01
PANCREAS	2.8521E-10	2.8480E-10	0.14
TESTES	2.1630E-09	2.1630E-09	0.00
THYROID	2.8519E-10	2.8470E-10	0.17
R.B.M.	7.8038E-09	7.8050E-09	-0.02
BONE SURFACE	1.6441E-07	1.6440E-07	0.01
STOMACH	1.4796E-09	1.4790E-09	0.04
S.I.	3.2714E-09	3.2710E-09	0.01
U.L.I.	1.8359E-08	1.8360E-08	-0.01
L.L.I.	5.3309E-08	5.3310E-08	0.00
SKIN	2.8519E-10	2.8470E-10	0.17
SPLEEN	2.8519E-10	2.8470E-10	0.17
THYMUS	2.8519E-10	2.8470E-10	0.17
UTERUS	2.8524E-10	2.8480E-10	0.15
ET	2.8519E-10	2.8470E-10	0.17
LUNG	2.8519E-10	2.8500E-10	0.07
COLON	3.3473E-08	3.3460E-08	0.04
ET1	2.8519E-10	2.8470E-10	0.17
ET2	2.8519E-10	2.8470E-10	0.17
LN(ET)	2.8519E-10	2.8470E-10	0.17

BBsec	2.8519E-10	2.8470E-10	0.17
BBbas	2.8519E-10	2.8470E-10	0.17
bb	2.8519E-10	2.8470E-10	0.17
AI	2.8519E-10	2.8470E-10	0.17
LN(TH)	2.8519E-10	2.8470E-10	0.17
ESOPHAGUS	2.8519E-10	2.8470E-10	0.17
REMAINDER	**3.5119E-10**	**3.5080E-10**	**0.11**
C.E.D.	**9.0184E-09**	**9.0160E-09**	**0.03**
Maximum			**0.17**

C.10.69. ^{240}Pu – Plutonium-240

Maximum difference in ***Effective Dose***: **-0.06%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **+0.18%** (Ingestion – Numerous).
Maximum difference excluding ***Respiratory Tract***: **+0.18%**.

C.10.69.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.7480E-06	1.7450E-06	0.17
URIN BLADDER	1.7480E-06	1.7450E-06	0.17
BRAIN	1.7479E-06	1.7450E-06	0.17
BREAST	1.7479E-06	1.7450E-06	0.17
GALL BLADDER	1.7481E-06	N/A	N/A
HEART	1.7479E-06	N/A	N/A
KIDNEYS	4.0907E-06	4.0910E-06	-0.01
LIVER	2.0863E-04	2.0870E-04	-0.03
MUSCLE	1.7479E-06	1.7450E-06	0.17
OVARIES	1.3026E-05	1.3030E-05	-0.03
PANCREAS	1.7479E-06	1.7450E-06	0.17
TESTES	1.3277E-05	1.3280E-05	-0.02
THYROID	1.7479E-06	1.7450E-06	0.17
R.B.M.	4.7956E-05	4.7970E-05	-0.03
BONE SURFACE	1.0088E-03	1.0090E-03	-0.02
STOMACH	1.7484E-06	1.7460E-06	0.14
S.I.	1.7492E-06	1.7470E-06	0.13
U.L.I.	1.7557E-06	1.7530E-06	0.15
L.L.I.	1.7708E-06	1.7680E-06	0.16
SKIN	1.7479E-06	1.7450E-06	0.17
SPLEEN	1.7479E-06	1.7450E-06	0.17
THYMUS	1.7479E-06	1.7450E-06	0.17
UTERUS	1.7479E-06	1.7450E-06	0.17
ET	1.4899E-05	1.4900E-05	-0.01
LUNG	2.0771E-05	2.0800E-05	-0.14
COLON	1.7622E-06	1.7600E-06	0.12
ET1	3.3311E-06	3.3280E-06	0.09
ET2	1.4923E-05	1.4920E-05	0.02
LN(ET)	2.3171E-06	2.3150E-06	0.09
BBsec	5.1783E-05	5.1890E-05	-0.21
BBbas	5.3502E-06	5.3550E-06	-0.09
bb	2.3886E-05	2.3830E-05	0.23
AI	9.9092E-06	9.9080E-06	0.01
LN(TH)	4.4017E-06	4.4000E-06	0.04
ESOPHAGUS	1.7479E-06	1.7450E-06	0.17
REMAINDER	**1.7780E-06**	**1.7750E-06**	**0.17**
C.E.D.	**3.2299E-05**	**3.2310E-05**	**-0.03**
Maximum			**0.24**

C.10.69.2. Acute Inhalation (Type S: f_1 = 0.00001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.5392E-07	1.5370E-07	0.14
URIN BLADDER	1.5392E-07	1.5370E-07	0.14
BRAIN	1.5392E-07	1.5370E-07	0.14
BREAST	1.5392E-07	1.5370E-07	0.14
GALL BLADDER	1.5393E-07	N/A	N/A
HEART	1.5393E-07	N/A	N/A
KIDNEYS	3.8573E-07	3.8580E-07	-0.02
LIVER	1.8949E-05	1.8960E-05	-0.06
MUSCLE	1.5393E-07	1.5370E-07	0.15
OVARIES	1.1785E-06	1.1780E-06	0.04
PANCREAS	1.5392E-07	1.5370E-07	0.14
TESTES	1.2012E-06	1.2010E-06	0.02
THYROID	1.5391E-07	1.5370E-07	0.14
R.B.M.	4.4871E-06	4.4880E-06	-0.02
BONE SURFACE	9.0751E-05	9.0770E-05	-0.02
STOMACH	1.5449E-07	1.5420E-07	0.19
S.I.	1.5534E-07	1.5510E-07	0.15
U.L.I.	1.6255E-07	1.6230E-07	0.15
L.L.I.	1.7925E-07	1.7900E-07	0.14
SKIN	1.5391E-07	1.5370E-07	0.14
SPLEEN	1.5392E-07	1.5370E-07	0.14
THYMUS	1.5392E-07	1.5370E-07	0.14
UTERUS	1.5391E-07	1.5370E-07	0.14
ET	7.9886E-05	7.9910E-05	-0.03
LUNG	4.6625E-05	4.6670E-05	-0.10
COLON	1.6977E-07	1.6950E-07	0.16
ET1	1.7381E-06	1.7380E-06	0.01
ET2	7.9903E-05	7.9920E-05	-0.02
LN(ET)	1.4155E-04	1.4160E-04	-0.04
BBsec	6.5510E-05	6.5650E-05	-0.21
BBbas	5.9973E-06	6.0100E-06	-0.21
bb	3.3353E-05	3.3290E-05	0.19
AI	6.9442E-05	6.9450E-05	-0.01
LN(TH)	4.8789E-04	4.8800E-04	-0.02
ESOPHAGUS	1.5392E-07	1.5370E-07	0.14
REMAINDER	**1.9518E-07**	**1.9500E-07**	**0.09**
C.E.D.	**8.3096E-06**	**8.3150E-06**	**-0.06**
Maximum			**-0.21**

C.10.69.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.4255E-08	1.4230E-08	0.18
URIN BLADDER	1.4256E-08	1.4230E-08	0.18
BRAIN	1.4255E-08	1.4230E-08	0.18
BREAST	1.4255E-08	1.4230E-08	0.18
GALL BLADDER	1.4256E-08	N/A	N/A
HEART	1.4255E-08	N/A	N/A
KIDNEYS	3.3284E-08	3.3280E-08	0.01
LIVER	1.6989E-06	1.6990E-06	-0.01
MUSCLE	1.4255E-08	1.4230E-08	0.18
OVARIES	1.0609E-07	1.0610E-07	-0.01
PANCREAS	1.4255E-08	1.4230E-08	0.18

TESTES	1.0813E-07	1.0810E-07	0.03
THYROID	1.4255E-08	1.4230E-08	0.18
R.B.M.	3.9025E-07	3.9030E-07	-0.01
BONE SURFACE	8.2185E-06	8.2180E-06	0.01
STOMACH	1.5456E-08	1.5430E-08	0.17
S.I.	1.7256E-08	1.7230E-08	0.15
U.L.I.	3.2419E-08	3.2400E-08	0.06
L.L.I.	6.7543E-08	6.7520E-08	0.03
SKIN	1.4255E-08	1.4230E-08	0.18
SPLEEN	1.4255E-08	1.4230E-08	0.18
THYMUS	1.4255E-08	1.4230E-08	0.18
UTERUS	1.4255E-08	1.4230E-08	0.18
ET	1.4255E-08	1.4230E-08	0.18
LUNG	1.4255E-08	1.4250E-08	0.04
COLON	4.7608E-08	4.7570E-08	0.08
ET1	1.4255E-08	1.4230E-08	0.18
ET2	1.4255E-08	1.4230E-08	0.18
LN(ET)	1.4255E-08	1.4230E-08	0.18
BBsec	1.4255E-08	1.4230E-08	0.18
BBbas	1.4255E-08	1.4230E-08	0.18
bb	1.4255E-08	1.4230E-08	0.18
AI	1.4255E-08	1.4230E-08	0.18
LN(TH)	1.4255E-08	1.4230E-08	0.18
ESOPHAGUS	1.4255E-08	1.4230E-08	0.18
REMAINDER	**1.4509E-08**	**1.4490E-08**	**0.13**
C.E.D.	**2.4858E-07**	**2.4860E-07**	**-0.01**
Maximum			**0.18**

C.10.69.4. Acute Ingestion (f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.8509E-09	2.8460E-09	0.17
URIN BLADDER	2.8511E-09	2.8470E-09	0.14
BRAIN	2.8509E-09	2.8460E-09	0.17
BREAST	2.8508E-09	2.8460E-09	0.17
GALL BLADDER	2.8513E-09	N/A	N/A
HEART	2.8509E-09	N/A	N/A
KIDNEYS	6.6570E-09	6.6570E-09	0.00
LIVER	3.3979E-07	3.3990E-07	-0.03
MUSCLE	2.8510E-09	2.8460E-09	0.18
OVARIES	2.1220E-08	2.1220E-08	0.00
PANCREAS	2.8509E-09	2.8460E-09	0.17
TESTES	2.1625E-08	2.1620E-08	0.02
THYROID	2.8508E-09	2.8460E-09	0.17
R.B.M.	7.8052E-08	7.8060E-08	-0.01
BONE SURFACE	1.6437E-06	1.6430E-06	0.04
STOMACH	4.0518E-09	4.0470E-09	0.12
S.I.	5.8535E-09	5.8490E-09	0.08
U.L.I.	2.1022E-08	2.1020E-08	0.01
L.L.I.	5.6157E-08	5.6150E-08	0.01
SKIN	2.8509E-09	2.8460E-09	0.17
SPLEEN	2.8509E-09	2.8460E-09	0.17
THYMUS	2.8508E-09	2.8460E-09	0.17
UTERUS	2.8509E-09	2.8460E-09	0.17
ET	2.8508E-09	2.8460E-09	0.17
LUNG	2.8509E-09	2.8490E-09	0.07
COLON	3.6215E-08	3.6200E-08	0.04
ET1	2.8508E-09	2.8460E-09	0.17
ET2	2.8508E-09	2.8460E-09	0.17
LN(ET)	2.8508E-09	2.8460E-09	0.17
BBsec	2.8509E-09	2.8460E-09	0.17
BBbas	2.8509E-09	2.8460E-09	0.17
bb	2.8509E-09	2.8460E-09	0.17
AI	2.8509E-09	2.8460E-09	0.17
LN(TH)	2.8509E-09	2.8460E-09	0.17
ESOPHAGUS	2.8508E-09	2.8460E-09	0.17
REMAINDER	**2.9518E-09**	**2.9470E-09**	**0.16**
C.E.D.	**5.3038E-08**	**5.3040E-08**	**0.00**
Maximum			**0.18**

C.10.69.5. Acute Ingestion (f_1 = 0.00001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.8510E-10	2.8460E-10	0.18
URIN BLADDER	2.8518E-10	2.8470E-10	0.17
BRAIN	2.8509E-10	2.8460E-10	0.17
BREAST	2.8508E-10	2.8460E-10	0.17
GALL BLADDER	2.8529E-10	N/A	N/A
HEART	2.8509E-10	N/A	N/A
KIDNEYS	6.6570E-10	6.6570E-10	0.00
LIVER	3.3979E-08	3.3990E-08	-0.03
MUSCLE	2.8518E-10	2.8470E-10	0.17
OVARIES	2.1242E-09	2.1240E-09	0.01
PANCREAS	2.8512E-10	2.8470E-10	0.15
TESTES	2.1625E-09	2.1620E-09	0.02
THYROID	2.8508E-10	2.8460E-10	0.17
R.B.M.	7.8052E-09	7.8060E-09	-0.01
BONE SURFACE	1.6437E-07	1.6430E-07	0.04
STOMACH	1.4860E-09	1.4860E-09	0.00
S.I.	3.2879E-09	3.2870E-09	0.03
U.L.I.	1.8458E-08	1.8460E-08	-0.01
L.L.I.	5.3595E-08	5.3590E-08	0.01
SKIN	2.8509E-10	2.8460E-10	0.17
SPLEEN	2.8509E-10	2.8460E-10	0.17
THYMUS	2.8508E-10	2.8460E-10	0.17
UTERUS	2.8517E-10	2.8470E-10	0.17
ET	2.8508E-10	2.8460E-10	0.17
LUNG	2.8509E-10	2.8490E-10	0.07
COLON	3.3652E-08	3.3640E-08	0.04
ET1	2.8508E-10	2.8460E-10	0.17
ET2	2.8508E-10	2.8460E-10	0.17
LN(ET)	2.8508E-10	2.8460E-10	0.17
BBsec	2.8509E-10	2.8460E-10	0.17
BBbas	2.8509E-10	2.8460E-10	0.17
bb	2.8509E-10	2.8460E-10	0.17
AI	2.8509E-10	2.8460E-10	0.17
LN(TH)	2.8509E-10	2.8460E-10	0.17
ESOPHAGUS	2.8508E-10	2.8460E-10	0.17
REMAINDER	**3.5149E-10**	**3.5110E-10**	**0.11**
C.E.D.	**9.0400E-09**	**9.0380E-09**	**0.02**
Maximum			**0.18**

C.10.70. ^{241}Pu – Plutonium-241

Maximum difference in ***Effective Dose***: **-0.60%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.75%** (Inhalation – type "S" – LN_{TH}).
Maximum difference excluding ***Respiratory Tract***: **-0.64%**.

C.10.70.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.5873E-08	3.6010E-08	-0.38
URIN BLADDER	3.5813E-08	3.5950E-08	-0.38
BRAIN	3.5827E-08	3.5960E-08	-0.37
BREAST	3.5816E-08	3.5950E-08	-0.37
GALL BLADDER	3.5924E-08	N/A	N/A
HEART	3.5836E-08	N/A	N/A
KIDNEYS	6.0827E-08	6.1220E-08	-0.64
LIVER	4.1122E-06	4.1390E-06	-0.65
MUSCLE	3.5826E-08	3.5960E-08	-0.37
OVARIES	2.6034E-07	2.6190E-07	-0.60
PANCREAS	3.5854E-08	3.5990E-08	-0.38
TESTES	2.6533E-07	2.6690E-07	-0.59
THYROID	3.5817E-08	3.5950E-08	-0.37
R.B.M.	7.9124E-07	7.9620E-07	-0.62
BONE SURFACE	2.0112E-05	2.0230E-05	-0.58
STOMACH	3.5826E-08	3.5960E-08	-0.37
S.I.	3.5834E-08	3.5970E-08	-0.38
U.L.I.	3.5874E-08	3.6010E-08	-0.38
L.L.I.	3.5945E-08	3.6080E-08	-0.37
SKIN	3.5814E-08	3.5950E-08	-0.38
SPLEEN	3.5819E-08	3.5950E-08	-0.36
THYMUS	3.5818E-08	3.5950E-08	-0.37
UTERUS	3.5817E-08	3.5950E-08	-0.37
ET	4.5861E-08	4.6000E-08	-0.30
LUNG	4.1085E-08	4.1260E-08	-0.42
COLON	3.5905E-08	3.6040E-08	-0.37
ET1	3.5944E-08	3.6080E-08	-0.38
ET2	4.5880E-08	4.6020E-08	-0.30
LN(ET)	3.6797E-08	3.6930E-08	-0.36
BBsec	4.4787E-08	4.4940E-08	-0.34
BBbas	3.7292E-08	3.7430E-08	-0.37
bb	3.9843E-08	3.9970E-08	-0.32
AI	4.2377E-08	4.2510E-08	-0.31
LN(TH)	3.9380E-08	3.9510E-08	-0.33
ESOPHAGUS	3.5818E-08	3.5950E-08	-0.37
REMAINDER	**3.6083E-08**	**3.6220E-08**	**-0.38**
C.E.D.	**5.7761E-07**	**5.8110E-07**	**-0.60**
Maximum			**-0.65**

C.50.70.2. Acute Inhalation (Type S: f_1 = 0.00001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.4423E-09	3.4520E-09	-0.28
URIN BLADDER	3.4341E-09	3.4440E-09	-0.29
BRAIN	3.4355E-09	3.4450E-09	-0.28
BREAST	3.4366E-09	3.4460E-09	-0.27
GALL BLADDER	3.4458E-09	N/A	N/A
HEART	3.4414E-09	N/A	N/A
KIDNEYS	7.0566E-09	7.1000E-09	-0.61
LIVER	4.1529E-07	4.1790E-07	-0.62
MUSCLE	3.4368E-09	3.4460E-09	-0.27
OVARIES	2.6061E-08	2.6200E-08	-0.53
PANCREAS	3.4398E-09	3.4490E-09	-0.27
TESTES	2.6562E-08	2.6710E-08	-0.55
THYROID	3.4352E-09	3.4450E-09	-0.28
R.B.M.	8.7681E-08	8.8210E-08	-0.60
BONE SURFACE	1.9985E-06	2.0100E-06	-0.57
STOMACH	3.4393E-09	3.4490E-09	-0.28
S.I.	3.4432E-09	3.4530E-09	-0.28
U.L.I.	3.4824E-09	3.4920E-09	-0.27
L.L.I.	3.5710E-09	3.5800E-09	-0.25
SKIN	3.4345E-09	3.4440E-09	-0.28
SPLEEN	3.4364E-09	3.4460E-09	-0.28
THYMUS	3.4374E-09	3.4470E-09	-0.28
UTERUS	3.4345E-09	3.4440E-09	-0.28
ET	3.0039E-07	3.0060E-07	-0.07
LUNG	2.1113E-07	2.1170E-07	-0.27
COLON	3.5207E-09	3.5300E-09	-0.26
ET1	3.6785E-09	3.6890E-09	-0.28
ET2	2.9835E-07	2.9850E-07	-0.05
LN(ET)	2.6378E-06	2.6540E-06	-0.61
BBsec	2.1078E-08	2.1130E-08	-0.25
BBbas	6.6790E-09	6.6960E-09	-0.25
bb	5.1922E-08	5.2020E-08	-0.19
AI	5.3834E-07	5.3980E-07	-0.27
LN(TH)	9.9552E-06	1.0030E-05	-0.75
ESOPHAGUS	3.4374E-09	3.4470E-09	-0.28
REMAINDER	**3.6182E-09**	**3.6280E-09**	**-0.27**
C.E.D.	**8.3657E-08**	**8.4070E-08**	**-0.49**
Maximum			**-0.75**

C.10.70.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.9111E-10	2.9220E-10	-0.37
URIN BLADDER	2.9063E-10	2.9170E-10	-0.37
BRAIN	2.9074E-10	2.9180E-10	-0.36
BREAST	2.9064E-10	2.9170E-10	-0.36
GALL BLADDER	2.9152E-10	N/A	N/A
HEART	2.9081E-10	N/A	N/A
KIDNEYS	4.8897E-10	4.9210E-10	-0.64
LIVER	3.3276E-08	3.3490E-08	-0.64
MUSCLE	2.9073E-10	2.9180E-10	-0.37
OVARIES	2.1075E-09	2.1200E-09	-0.59
PANCREAS	2.9096E-10	2.9200E-10	-0.36
TESTES	2.1479E-09	2.1600E-09	-0.56
THYROID	2.9066E-10	2.9170E-10	-0.36
R.B.M.	6.3761E-09	6.4150E-09	-0.61
BONE SURFACE	1.6288E-07	1.6380E-07	-0.56
STOMACH	2.9677E-10	2.9780E-10	-0.35
S.I.	3.0591E-10	3.0700E-10	-0.36
U.L.I.	3.8264E-10	3.8370E-10	-0.28
L.L.I.	5.6042E-10	5.6150E-10	-0.19
SKIN	2.9063E-10	2.9170E-10	-0.37
SPLEEN	2.9067E-10	2.9170E-10	-0.35
THYMUS	2.9067E-10	2.9170E-10	-0.35
UTERUS	2.9066E-10	2.9170E-10	-0.36
ET	2.9066E-10	2.9170E-10	-0.36
LUNG	2.9087E-10	2.9220E-10	-0.46
COLON	4.5952E-10	4.6050E-10	-0.21
ET1	2.9066E-10	2.9170E-10	-0.36
ET2	2.9066E-10	2.9170E-10	-0.36
LN(ET)	2.9066E-10	2.9170E-10	-0.36
BBsec	2.9087E-10	2.9190E-10	-0.35
BBbas	2.9087E-10	2.9190E-10	-0.35
bb	2.9087E-10	2.9190E-10	-0.35
AI	2.9087E-10	2.9190E-10	-0.35
LN(TH)	2.9087E-10	2.9190E-10	-0.35
ESOPHAGUS	2.9067E-10	2.9170E-10	-0.35
REMAINDER	**2.9304E-10**	**2.9410E-10**	**-0.36**
C.E.D.	**4.6887E-09**	**4.7160E-09**	**-0.58**

Maximum			**-0.64**

C.10.70.4. Acute Ingestion (f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.8222E-11	5.8430E-11	-0.36
URIN BLADDER	5.8125E-11	5.8340E-11	-0.37
BRAIN	5.8147E-11	5.8360E-11	-0.36
BREAST	5.8128E-11	5.8340E-11	-0.36
GALL BLADDER	5.8304E-11	N/A	N/A
HEART	5.8162E-11	N/A	N/A
KIDNEYS	9.7794E-11	9.8420E-11	-0.64
LIVER	6.6552E-09	6.6970E-09	-0.62
MUSCLE	5.8146E-11	5.8360E-11	-0.37
OVARIES	4.2150E-10	4.2400E-10	-0.59
PANCREAS	5.8191E-11	5.8400E-11	-0.36
TESTES	4.2958E-10	4.3210E-10	-0.58
THYROID	5.8131E-11	5.8340E-11	-0.36
R.B.M.	1.2752E-09	1.2830E-09	-0.61
BONE SURFACE	3.2576E-08	3.2760E-08	-0.56
STOMACH	6.4209E-11	6.4420E-11	-0.33
S.I.	7.3320E-11	7.3530E-11	-0.29
U.L.I.	1.5003E-10	1.5020E-10	-0.11
L.L.I.	3.2791E-10	3.2810E-10	-0.06
SKIN	5.8126E-11	5.8340E-11	-0.37
SPLEEN	5.8134E-11	5.8340E-11	-0.35
THYMUS	5.8133E-11	5.8340E-11	-0.35
UTERUS	5.8132E-11	5.8340E-11	-0.36
ET	5.8131E-11	5.8340E-11	-0.36
LUNG	5.8174E-11	5.8440E-11	-0.46
COLON	2.2695E-10	2.2710E-10	-0.07
ET1	5.8131E-11	5.8340E-11	-0.36
ET2	5.8131E-11	5.8340E-11	-0.36
LN(ET)	5.8131E-11	5.8340E-11	-0.36
BBsec	5.8174E-11	5.8380E-11	-0.35
BBbas	5.8174E-11	5.8380E-11	-0.35
bb	5.8174E-11	5.8380E-11	-0.35
AI	5.8174E-11	5.8380E-11	-0.35
LN(TH)	5.8174E-11	5.8380E-11	-0.35
ESOPHAGUS	5.8133E-11	5.8340E-11	-0.35
REMAINDER	**5.8861E-11**	**5.9080E-11**	**-0.37**
C.E.D.	**9.5453E-10**	**9.6000E-10**	**-0.57**
Maximum			**-0.64**

C.10.70.5. Acute Ingestion (f_1 = 0.00001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.8223E-12	5.8430E-12	-0.35
URIN BLADDER	5.8133E-12	5.8340E-12	-0.35
BRAIN	5.8147E-12	5.8360E-12	-0.36
BREAST	5.8128E-12	5.8340E-12	-0.36
GALL BLADDER	5.8311E-12	N/A	N/A
HEART	5.8162E-12	N/A	N/A
KIDNEYS	9.7797E-12	9.8420E-12	-0.63
LIVER	6.6552E-10	6.6970E-10	-0.62
MUSCLE	5.8148E-12	5.8360E-12	-0.36
OVARIES	4.2153E-11	4.2400E-11	-0.58
PANCREAS	5.8193E-12	5.8400E-12	-0.35
TESTES	4.2959E-11	4.3210E-11	-0.58
THYROID	5.8131E-12	5.8340E-12	-0.36
R.B.M.	1.2752E-10	1.2830E-10	-0.61
BONE SURFACE	3.2576E-09	3.2760E-09	-0.56
STOMACH	1.1882E-11	1.1900E-11	-0.15
S.I.	2.0988E-11	2.1010E-11	-0.10
U.L.I.	9.7693E-11	9.7710E-11	-0.02
L.L.I.	2.7559E-10	2.7560E-10	0.00
SKIN	5.8127E-12	5.8340E-12	-0.37
SPLEEN	5.8136E-12	5.8350E-12	-0.37
THYMUS	5.8133E-12	5.8340E-12	-0.35
UTERUS	5.8142E-12	5.8350E-12	-0.36
ET	5.8131E-12	5.8340E-12	-0.36
LUNG	5.8174E-12	5.8440E-12	-0.46
COLON	1.7462E-10	1.7460E-10	0.01
ET1	5.8131E-12	5.8340E-12	-0.36
ET2	5.8131E-12	5.8340E-12	-0.36
LN(ET)	5.8131E-12	5.8340E-12	-0.36
BBsec	5.8174E-12	5.8380E-12	-0.35
BBbas	5.8174E-12	5.8380E-12	-0.35
bb	5.8174E-12	5.8380E-12	-0.35
AI	5.8174E-12	5.8380E-12	-0.35
LN(TH)	5.8174E-12	5.8380E-12	-0.35
ESOPHAGUS	5.8133E-12	5.8340E-12	-0.35
REMAINDER	**6.1705E-12**	**6.1920E-12**	**-0.35**
C.E.D.	**1.1435E-10**	**1.1490E-10**	**-0.48**
Maximum			**-0.63**

C.10.71. ^{242}Pu – Plutonium-242

Maximum difference in ***Effective Dose***: **-0.05%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **+0.18%** (Ingestion – Numerous).
Maximum difference excluding ***Respiratory Tract***: **+0.18%**.

C.10.71.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.6627E-06	1.6600E-06	0.16
URIN BLADDER	1.6627E-06	1.6600E-06	0.16
BRAIN	1.6626E-06	1.6600E-06	0.16
BREAST	1.6626E-06	1.6600E-06	0.16
GALL BLADDER	1.6628E-06	N/A	N/A
HEART	1.6626E-06	N/A	N/A
KIDNEYS	3.8879E-06	3.8880E-06	0.00
LIVER	1.9841E-04	1.9850E-04	-0.05
MUSCLE	1.6626E-06	1.6600E-06	0.16
OVARIES	1.2388E-05	1.2390E-05	-0.02
PANCREAS	1.6627E-06	1.6600E-06	0.16
TESTES	1.2626E-05	1.2630E-05	-0.03
THYROID	1.6626E-06	1.6600E-06	0.16
R.B.M.	4.5585E-05	4.5600E-05	-0.03
BONE SURFACE	9.5939E-04	9.5940E-04	0.00
STOMACH	1.6631E-06	1.6610E-06	0.13
S.I.	1.6638E-06	1.6610E-06	0.17
U.L.I.	1.6700E-06	1.6670E-06	0.18
L.L.I.	1.6842E-06	1.6820E-06	0.13

SKIN	1.6626E-06	1.6600E-06	0.16
SPLEEN	1.6626E-06	1.6600E-06	0.16
THYMUS	1.6626E-06	1.6600E-06	0.16
UTERUS	1.6626E-06	1.6600E-06	0.16
ET	1.4338E-05	1.4340E-05	-0.01
LUNG	1.8761E-05	1.8780E-05	-0.10
COLON	1.6762E-06	1.6740E-06	0.13
ET1	1.7385E-06	1.7360E-06	0.14
ET2	1.4363E-05	1.4360E-05	0.02
LN(ET)	2.2027E-06	2.2000E-06	0.12
BBsec	4.3292E-05	4.3380E-05	-0.20
BBbas	4.6594E-06	4.6630E-06	-0.08
bb	2.2946E-05	2.2890E-05	0.24
AI	9.4063E-06	9.4050E-06	0.01
LN(TH)	4.1808E-06	4.1790E-06	0.04
ESOPHAGUS	1.6626E-06	1.6600E-06	0.16
REMAINDER	**1.6912E-06**	**1.6890E-06**	**0.13**
C.E.D.	**3.0596E-05**	**3.0600E-05**	**-0.01**
Maximum			**0.24**

C.10.71.2. Acute Inhalation (Type S: f_1 = 0.00001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.4646E-07	1.4620E-07	0.18
URIN BLADDER	1.4645E-07	1.4620E-07	0.17
BRAIN	1.4644E-07	1.4620E-07	0.16
BREAST	1.4645E-07	1.4620E-07	0.17
GALL BLADDER	1.4646E-07	N/A	N/A
HEART	1.4646E-07	N/A	N/A
KIDNEYS	3.6677E-07	3.6680E-07	-0.01
LIVER	1.8027E-05	1.8030E-05	-0.02
MUSCLE	1.4645E-07	1.4620E-07	0.17
OVARIES	1.1212E-06	1.1210E-06	0.02
PANCREAS	1.4645E-07	1.4620E-07	0.17
TESTES	1.1427E-06	1.1420E-06	0.06
THYROID	1.4644E-07	1.4620E-07	0.16
R.B.M.	4.2669E-06	4.2680E-06	-0.03
BONE SURFACE	8.6330E-05	8.6350E-05	-0.02
STOMACH	1.4698E-07	1.4680E-07	0.12
S.I.	1.4779E-07	1.4760E-07	0.13
U.L.I.	1.5463E-07	1.5440E-07	0.15
L.L.I.	1.7045E-07	1.7020E-07	0.15
SKIN	1.4644E-07	1.4620E-07	0.16
SPLEEN	1.4645E-07	1.4620E-07	0.17
THYMUS	1.4645E-07	1.4620E-07	0.17
UTERUS	1.4644E-07	1.4620E-07	0.16
ET	7.7021E-05	7.7040E-05	-0.02
LUNG	4.2729E-05	4.2760E-05	-0.07
COLON	1.6147E-07	1.6120E-07	0.17
ET1	2.2323E-07	2.2300E-07	0.10
ET2	7.7040E-05	7.7060E-05	-0.03
LN(ET)	1.3459E-04	1.3460E-04	-0.01
BBsec	5.4435E-05	5.4550E-05	-0.21
BBbas	5.0823E-06	5.0920E-06	-0.19
bb	3.1233E-05	3.1170E-05	0.20
AI	6.5931E-05	6.5940E-05	-0.01
LN(TH)	4.6401E-04	4.6410E-04	-0.02
ESOPHAGUS	1.4645E-07	1.4620E-07	0.17
REMAINDER	**1.8619E-07**	**1.8600E-07**	**0.10**
C.E.D.	**7.7098E-06**	**7.7140E-06**	**-0.05**
Maximum			**-0.21**

C.10.71.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.3560E-08	1.3540E-08	0.15
URIN BLADDER	1.3560E-08	1.3540E-08	0.15
BRAIN	1.3559E-08	1.3540E-08	0.14
BREAST	1.3559E-08	1.3540E-08	0.14
GALL BLADDER	1.3561E-08	N/A	N/A
HEART	1.3559E-08	N/A	N/A
KIDNEYS	3.1633E-08	3.1630E-08	0.01
LIVER	1.6156E-06	1.6160E-06	-0.02
MUSCLE	1.3559E-08	1.3540E-08	0.14
OVARIES	1.0089E-07	1.0090E-07	-0.01
PANCREAS	1.3559E-08	1.3540E-08	0.14
TESTES	1.0283E-07	1.0280E-07	0.03
THYROID	1.3559E-08	1.3540E-08	0.14
R.B.M.	3.7094E-07	3.7100E-07	-0.02
BONE SURFACE	7.8156E-06	7.8150E-06	0.01
STOMACH	1.4697E-08	1.4680E-08	0.12
S.I.	1.6403E-08	1.6380E-08	0.14
U.L.I.	3.0771E-08	3.0750E-08	0.07
L.L.I.	6.4052E-08	6.4030E-08	0.03
SKIN	1.3559E-08	1.3540E-08	0.14
SPLEEN	1.3559E-08	1.3540E-08	0.14
THYMUS	1.3559E-08	1.3540E-08	0.14
UTERUS	1.3559E-08	1.3540E-08	0.14
ET	1.3559E-08	1.3540E-08	0.14
LUNG	1.3559E-08	1.3550E-08	0.07
COLON	4.5163E-08	4.5130E-08	0.07
ET1	1.3559E-08	1.3540E-08	0.14
ET2	1.3559E-08	1.3540E-08	0.14
LN(ET)	1.3559E-08	1.3540E-08	0.14
BBsec	1.3559E-08	1.3540E-08	0.14
BBbas	1.3559E-08	1.3540E-08	0.14
bb	1.3559E-08	1.3540E-08	0.14
AI	1.3559E-08	1.3540E-08	0.14
LN(TH)	1.3559E-08	1.3540E-08	0.14
ESOPHAGUS	1.3559E-08	1.3540E-08	0.14
REMAINDER	**1.3800E-08**	**1.3780E-08**	**0.15**
C.E.D.	**2.3636E-07**	**2.3640E-07**	**-0.02**
Maximum			**0.15**

C.10.71.4. Acute Ingestion (f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.7120E-09	2.7080E-09	0.15
URIN BLADDER	2.7122E-09	2.7080E-09	0.16
BRAIN	2.7118E-09	2.7070E-09	0.18
BREAST	2.7118E-09	2.7070E-09	0.18
GALL BLADDER	2.7125E-09	N/A	N/A
HEART	2.7118E-09	N/A	N/A
KIDNEYS	6.3266E-09	6.3260E-09	0.01
LIVER	3.2312E-07	3.2320E-07	-0.02
MUSCLE	2.7119E-09	2.7080E-09	0.14
OVARIES	2.0180E-08	2.0180E-08	0.00
PANCREAS	2.7119E-09	2.7080E-09	0.14
TESTES	2.0566E-08	2.0560E-08	0.03
THYROID	2.7117E-09	2.7070E-09	0.17
R.B.M.	7.4188E-08	7.4200E-08	-0.02
BONE SURFACE	1.5631E-06	1.5630E-06	0.01
STOMACH	3.8498E-09	3.8450E-09	0.12
S.I.	5.5573E-09	5.5530E-09	0.08
U.L.I.	1.9930E-08	1.9930E-08	0.00
L.L.I.	5.3222E-08	5.3220E-08	0.00
SKIN	2.7118E-09	2.7070E-09	0.18
SPLEEN	2.7118E-09	2.7070E-09	0.18

THYMUS	2.7118E-09	2.7070E-09	0.18
UTERUS	2.7121E-09	2.7080E-09	0.15
ET	2.7117E-09	2.7070E-09	0.17
LUNG	2.7119E-09	2.7100E-09	0.07
COLON	3.4326E-08	3.4310E-08	0.05
ET1	2.7117E-09	2.7070E-09	0.17
ET2	2.7117E-09	2.7070E-09	0.17
LN(ET)	2.7117E-09	2.7070E-09	0.17
BBsec	2.7119E-09	2.7080E-09	0.14
BBbas	2.7119E-09	2.7080E-09	0.14
bb	2.7119E-09	2.7080E-09	0.14
AI	2.7119E-09	2.7080E-09	0.14
LN(TH)	2.7119E-09	2.7080E-09	0.14
ESOPHAGUS	2.7118E-09	2.7070E-09	0.18
REMAINDER	**2.8075E-09**	**2.8030E-09**	**0.16**
C.E.D.	**5.0419E-08**	**5.0420E-08**	**0.00**
Maximum			**0.18**

C.10.71.5. Acute Ingestion (f_1 = 0.00001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.7123E-10	2.7080E-10	0.16
URIN BLADDER	2.7148E-10	2.7100E-10	0.18
BRAIN	2.7118E-10	2.7070E-10	0.18
BREAST	2.7118E-10	2.7070E-10	0.18
GALL BLADDER	2.7157E-10	N/A	N/A
HEART	2.7120E-10	N/A	N/A
KIDNEYS	6.3274E-10	6.3270E-10	0.01
LIVER	3.2312E-08	3.2320E-08	-0.02
MUSCLE	2.7134E-10	2.7090E-10	0.16
OVARIES	2.0205E-09	2.0200E-09	0.02
PANCREAS	2.7129E-10	2.7090E-10	0.14
TESTES	2.0567E-09	2.0560E-09	0.03
THYROID	2.7118E-10	2.7070E-10	0.18
R.B.M.	7.4190E-09	7.4200E-09	-0.01
BONE SURFACE	1.5631E-07	1.5630E-07	0.01
STOMACH	1.4092E-09	1.4090E-09	0.01
S.I.	3.1169E-09	3.1160E-09	0.03
U.L.I.	1.7491E-08	1.7490E-08	0.01
L.L.I.	5.0785E-08	5.0780E-08	0.01
SKIN	2.7121E-10	2.7080E-10	0.15
SPLEEN	2.7124E-10	2.7080E-10	0.16
THYMUS	2.7118E-10	2.7070E-10	0.18
UTERUS	2.7157E-10	2.7110E-10	0.17
ET	2.7118E-10	2.7070E-10	0.18
LUNG	2.7120E-10	2.7100E-10	0.07
COLON	3.1888E-08	3.1870E-08	0.06
ET1	2.7118E-10	2.7070E-10	0.18
ET2	2.7118E-10	2.7070E-10	0.18
LN(ET)	2.7118E-10	2.7070E-10	0.18
BBsec	2.7120E-10	2.7080E-10	0.15
BBbas	2.7120E-10	2.7080E-10	0.15
bb	2.7120E-10	2.7080E-10	0.15
AI	2.7120E-10	2.7080E-10	0.15
LN(TH)	2.7120E-10	2.7080E-10	0.15
ESOPHAGUS	2.7118E-10	2.7070E-10	0.18
REMAINDER	**3.3418E-10**	**3.3380E-10**	**0.11**
C.E.D.	**8.5822E-09**	**8.5810E-09**	**0.01**
Maximum			**0.18**

C.10.72. ^{223}Ra – Radium-223 (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: +**2.37%** (Ingestion).
Maximum difference in ***Organ Dose***: **-31.6%** (Ingestion – Kidneys).
Maximum difference excluding ***Respiratory Tract***: **-31.6%**.

C.10.72.1. Acute Inhalation (Type M: f_1 = 0.2)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.14E-09	7.06E-09	1.04
URIN BLADDER	7.20E-09	7.15E-09	0.78
BRAIN	7.10E-09	7.03E-09	1.04
BREAST	7.12E-09	7.05E-09	1.05
GALL BLADDER	7.14E-09	N/A	N/A
HEART	7.16E-09	N/A	N/A
KIDNEYS	7.12E-09	1.01E-08	-29.18
LIVER	8.02E-08	8.07E-08	-0.54
MUSCLE	7.12E-09	7.05E-09	1.05
OVARIES	7.22E-09	6.88E-09	4.96
PANCREAS	7.13E-09	7.06E-09	1.05
TESTES	7.10E-09	6.76E-09	4.94
THYROID	7.11E-09	7.04E-09	1.05
R.B.M.	1.60E-07	1.59E-07	1.14
BONE SURFACE	1.67E-06	1.65E-06	0.79
STOMACH	9.66E-09	9.42E-09	2.57
S.I.	1.28E-08	1.22E-08	5.18
U.L.I.	5.06E-08	4.69E-08	7.82
L.L.I.	1.27E-07	1.18E-07	8.03
SKIN	7.10E-09	7.03E-09	1.04
SPLEEN	7.12E-09	6.93E-09	2.81
THYMUS	7.14E-09	7.07E-09	1.04
UTERUS	7.15E-09	7.07E-09	1.05
ET	1.22E-05	1.20E-05	1.32
LUNG	4.68E-05	4.69E-05	-0.12
COLON	8.38E-08	7.76E-08	8.03
ET1	6.07E-03	6.05E-03	0.37
ET2	6.10E-06	5.96E-06	2.35
LN(ET)	3.00E-08	2.96E-08	1.62
BBsec	1.52E-04	1.52E-04	-0.06
BBbas	4.94E-05	4.95E-05	-0.02
bb	3.52E-05	3.51E-05	0.34
AI	4.55E-06	4.46E-06	2.00
LN(TH)	2.00E-07	1.96E-07	1.87
ESOPHAGUS	7.14E-09	7.07E-09	1.04
REMAINDER	**1.32E-08**	**1.30E-08**	**0.97**
C.E.D.	**5.67E-06**	**5.68E-06**	**-0.11**
Maximum			**-29.18**

C.10.72.2. Acute Ingestion (f_1 = 0.2)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.26E-08	1.26E-08	0.17
URIN BLADDER	1.28E-08	1.28E-08	-0.05
BRAIN	1.26E-08	1.26E-08	0.20
BREAST	1.26E-08	1.26E-08	0.18
GALL BLADDER	1.27E-08	N/A	N/A
HEART	1.26E-08	N/A	N/A
KIDNEYS	1.26E-08	1.85E-08	-31.60
LIVER	1.42E-07	1.43E-07	-0.66
MUSCLE	1.26E-08	1.26E-08	0.22
OVARIES	1.29E-08	1.24E-08	4.10
PANCREAS	1.26E-08	1.26E-08	0.19
TESTES	1.26E-08	1.21E-08	4.02
THYROID	1.26E-08	1.26E-08	0.19
R.B.M.	2.85E-07	2.82E-07	1.14
BONE SURFACE	2.96E-06	2.93E-06	0.79
STOMACH	1.86E-08	1.82E-08	2.61
S.I.	2.67E-08	2.53E-08	5.54
U.L.I.	1.14E-07	1.06E-07	7.86
L.L.I.	2.94E-07	2.72E-07	8.13
SKIN	1.26E-08	1.26E-08	0.25
SPLEEN	1.26E-08	1.24E-08	1.95
THYMUS	1.26E-08	1.26E-08	0.20
UTERUS	1.27E-08	1.27E-08	0.25
ET	1.26E-08	1.26E-08	0.19
LUNG	1.26E-08	1.26E-08	0.08
COLON	1.92E-07	1.77E-07	8.08
ET1	1.26E-08	1.26E-08	0.19
ET2	1.26E-08	1.26E-08	0.19
LN(ET)	1.26E-08	1.26E-08	0.19
BBsec	1.26E-08	1.26E-08	0.24
BBbas	1.26E-08	1.26E-08	0.24
bb	1.26E-08	1.26E-08	0.24
AI	1.26E-08	1.26E-08	0.24
LN(TH)	1.26E-08	1.26E-08	0.24
ESOPHAGUS	1.26E-08	1.26E-08	0.2
REMAINDER	**1.29E-08**	**1.29E-08**	**0.00**
C.E.D.	**1.04E-07**	**1.01E-07**	**2.37**
Maximum			**-31.6**

C.10.73. ^{224}Ra – Radium-224 (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: **-3.59%** (Ingestion).
Maximum difference in ***Organ Dose***: **-81.0%** (Ingestion – Kidneys).
Maximum difference excluding ***Respiratory Tract***: **-81.0%**.

C.10.73.1. Acute Inhalation (Type M: f_1 = 0.2)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.7396E-09	5.6890E-09	-16.69
URIN BLADDER	4.8151E-09	5.8010E-09	-17.00
BRAIN	4.6831E-09	5.6320E-09	-16.85
BREAST	4.7187E-09	5.6670E-09	-16.73
GALL BLADDER	4.7619E-09	N/A	N/A
HEART	4.7654E-09	N/A	N/A
KIDNEYS	4.7211E-09	2.3300E-08	-79.74
LIVER	2.5001E-08	2.9930E-08	-16.47
MUSCLE	4.7331E-09	5.6790E-09	-16.66
OVARIES	5.0000E-09	5.7530E-09	-13.09
PANCREAS	4.7294E-09	5.6780E-09	-16.71
TESTES	4.6890E-09	5.4700E-09	-14.28
THYROID	4.7002E-09	5.6490E-09	-16.80
R.B.M.	1.0050E-07	9.1000E-08	10.44
BONE SURFACE	1.0632E-06	9.4840E-07	12.10
STOMACH	6.5005E-09	7.4390E-09	-12.62
S.I.	8.6502E-09	8.6560E-09	-0.07
U.L.I.	3.6502E-08	3.6040E-08	1.28
L.L.I.	9.3529E-08	9.2840E-08	0.74
SKIN	4.6872E-09	5.6350E-09	-16.82
SPLEEN	4.7221E-09	5.6490E-09	-16.41
THYMUS	4.7463E-09	5.6950E-09	-16.66
UTERUS	4.7975E-09	5.7350E-09	-16.35
ET	6.0867E-06	6.0350E-06	0.86
LUNG	2.0013E-05	2.0060E-05	-0.23
COLON	6.1162E-08	6.0570E-08	0.98
ET1	3.9037E-03	3.8920E-03	0.30
ET2	2.1874E-06	2.1470E-06	1.88
LN(ET)	1.2268E-08	1.3210E-08	-7.13
BBsec	6.4147E-05	6.4230E-05	-0.13
BBbas	2.1797E-05	2.1830E-05	-0.15
bb	1.5530E-05	1.5480E-05	0.32
AI	1.5969E-06	1.5970E-06	-0.01
LN(TH)	2.9455E-08	3.0400E-08	-3.11
ESOPHAGUS	4.7463E-09	5.6950E-09	-16.66
REMAINDER	**7.7783E-09**	**8.8590E-09**	**-12.20**
C.E.D.	**2.4360E-06**	**2.4400E-06**	**-0.16**
Maximum			**-79.74**

C.10.73.2. Acute Ingestion (f_1 = 0.2)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.5699E-09	1.0690E-08	-19.83
URIN BLADDER	8.8533E-09	1.1050E-08	-19.88
BRAIN	8.5103E-09	1.0630E-08	-19.94
BREAST	8.5114E-09	1.0630E-08	-19.93
GALL BLADDER	8.7046E-09	N/A	N/A
HEART	8.5284E-09	N/A	N/A
KIDNEYS	8.6112E-09	4.5260E-08	-80.97
LIVER	4.5508E-08	5.5630E-08	-18.20
MUSCLE	8.5986E-09	1.0720E-08	-19.79
OVARIES	9.3050E-09	1.1060E-08	-15.87
PANCREAS	8.5848E-09	1.0710E-08	-19.84
TESTES	8.5864E-09	1.0400E-08	-17.44
THYROID	8.5094E-09	1.0630E-08	-19.95
R.B.M.	1.8345E-07	1.6650E-07	10.18
BONE SURFACE	1.9412E-06	1.7310E-06	12.14
STOMACH	1.3008E-08	1.5040E-08	-13.51
S.I.	1.8381E-08	1.8140E-08	1.33
U.L.I.	8.3730E-08	8.2870E-08	1.04

L.L.I.	2.1965E-07	2.1830E-07	0.62
SKIN	8.5364E-09	1.0660E-08	-19.92
SPLEEN	8.5693E-09	1.0650E-08	-19.54
THYMUS	8.5139E-09	1.0640E-08	-19.98
UTERUS	8.8317E-09	1.0930E-08	-19.20
ET	8.5094E-09	1.0630E-08	-19.95
LUNG	8.5234E-09	1.0660E-08	-20.04
COLON	1.4251E-07	1.4140E-07	0.79
ET1	8.5094E-09	1.0630E-08	-19.95
ET2	8.5094E-09	1.0630E-08	-19.95
LN(ET)	8.5094E-09	1.0630E-08	-19.95
BBsec	8.5234E-09	1.0650E-08	-19.97
BBbas	8.5234E-09	1.0650E-08	-19.97
bb	8.5234E-09	1.0650E-08	-19.97
AI	8.5234E-09	1.0650E-08	-19.97
LN(TH)	8.5234E-09	1.0650E-08	-19.97
ESOPHAGUS	8.5139E-09	1.0640E-08	-19.98
REMAINDER	**8.7985E-09**	**1.1220E-08**	**-21.58**
C.E.D.	**6.7492E-08**	**6.5150E-08**	**3.59**
Maximum			**-80.97**

C.10.74. ^{226}Ra – Radium-226 (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: **-1.49%** (Ingestion).
Maximum difference in ***Organ Dose***: **-34.6%** (Inhalation – Kidneys).
Maximum difference excluding ***Respiratory Tract***: **-34.6%**.

C.10.74.1. Acute Inhalation (Type M: f_1 = 0.2)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.8589E-08	2.9650E-08	-3.58
URIN BLADDER	2.7871E-08	2.8940E-08	-3.69
BRAIN	2.8364E-08	2.9450E-08	-3.69
BREAST	2.7752E-08	2.8850E-08	-3.81
GALL BLADDER	2.7903E-08	N/A	N/A
HEART	2.7956E-08	N/A	N/A
KIDNEYS	2.8151E-08	4.3040E-08	-34.59
LIVER	1.2014E-07	1.2980E-07	-7.44
MUSCLE	2.8085E-08	2.9160E-08	-3.69
OVARIES	2.8406E-08	2.9370E-08	-3.28
PANCREAS	2.8081E-08	2.9150E-08	-3.67
TESTES	2.7740E-08	2.8870E-08	-3.91
THYROID	2.8037E-08	2.9130E-08	-3.75
R.B.M.	6.3600E-07	6.3510E-07	0.14
BONE SURFACE	8.7680E-06	9.0340E-06	-2.94
STOMACH	2.8433E-08	2.9370E-08	-3.19
S.I.	2.9562E-08	3.0150E-08	-1.95
U.L.I.	4.6969E-08	4.0620E-08	15.63
L.L.I.	9.6909E-08	7.9650E-08	21.67
SKIN	2.7868E-08	2.8960E-08	-3.77
SPLEEN	2.7899E-08	3.8690E-08	-27.89
THYMUS	2.7877E-08	2.8970E-08	-3.77
UTERUS	2.8018E-08	2.9050E-08	-3.55
ET	1.2454E-05	1.2540E-05	-0.69
LUNG	1.6332E-05	1.6570E-05	-1.44
COLON	6.8565E-08	5.7480E-08	19.28
ET1	6.6205E-06	6.4080E-06	3.32
ET2	1.2472E-05	1.2550E-05	-0.62
LN(ET)	5.5457E-07	5.6930E-07	-2.59
BBsec	3.8319E-05	3.8910E-05	-1.52
BBbas	2.8363E-06	3.0130E-06	-5.86
bb	2.0878E-05	2.0960E-05	-0.39
AI	7.5814E-06	7.7760E-06	-2.50
LN(TH)	2.4840E-06	2.5480E-06	-2.51
ESOPHAGUS	2.7877E-08	2.8970E-08	-3.77
REMAINDER	**3.4188E-08**	**3.5490E-08**	**-3.67**
C.E.D.	**2.1547E-06**	**2.1860E-06**	**-1.43**
Maximum			**-34.59**

C.10.74.2. Acute Ingestion (f_1 = 0.2)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.9340E-08	4.0800E-08	-3.58
URIN BLADDER	3.8379E-08	3.9870E-08	-3.74
BRAIN	3.9040E-08	4.0530E-08	-3.68
BREAST	3.8188E-08	3.9690E-08	-3.78
GALL BLADDER	3.8401E-08	N/A	N/A
HEART	3.8461E-08	N/A	N/A
KIDNEYS	3.8746E-08	5.9180E-08	-34.53
LIVER	1.6535E-07	1.7860E-07	-7.42
MUSCLE	3.8657E-08	4.0140E-08	-3.69
OVARIES	3.9143E-08	4.0530E-08	-3.42
PANCREAS	3.8644E-08	4.0120E-08	-3.68
TESTES	3.8188E-08	3.9750E-08	-3.93
THYROID	3.8586E-08	4.0080E-08	-3.73
R.B.M.	8.7478E-07	8.7400E-07	0.09
BONE SURFACE	1.2069E-05	1.2440E-05	-2.98
STOMACH	3.9440E-08	4.0900E-08	-3.57
S.I.	4.1444E-08	4.2500E-08	-2.48
U.L.I.	6.9246E-08	6.4100E-08	8.03
L.L.I.	1.6023E-07	1.4530E-07	10.28
SKIN	3.8357E-08	3.9850E-08	-3.75
SPLEEN	3.8395E-08	5.3240E-08	-27.88
THYMUS	3.8358E-08	3.9850E-08	-3.74
UTERUS	3.8579E-08	4.0020E-08	-3.60
ET	3.8586E-08	4.0080E-08	-3.73
LUNG	3.8574E-08	4.0100E-08	-3.81
COLON	1.0859E-07	9.9190E-08	9.48
ET1	3.8586E-08	4.0080E-08	-3.73
ET2	3.8586E-08	4.0080E-08	-3.73
LN(ET)	3.8586E-08	4.0080E-08	-3.73
BBsec	3.8574E-08	4.0060E-08	-3.71
BBbas	3.8574E-08	4.0060E-08	-3.71
bb	3.8574E-08	4.0060E-08	-3.71
AI	3.8574E-08	4.0060E-08	-3.71
LN(TH)	3.8574E-08	4.0060E-08	-3.71
ESOPHAGUS	3.8358E-08	3.9850E-08	-3.74
REMAINDER	**3.8732E-08**	**4.0470E-08**	**-4.29**
C.E.D.	**2.7415E-07**	**2.7830E-07**	**-1.49**
Maximum			**-34.53**

C.10.75. ^{228}Ra – Radium-228 (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: **-32%** (Inhalation).
Maximum difference in ***Organ Dose***: **-95%** (Inhalation – Liver).
Maximum difference excluding ***Respiratory Tract***: **+2,647%** (Remainder).

C.10.75.1. Acute Inhalation (Type M: f_1 = 0.2)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.9836E-08	1.615E-07	-56.8
URIN BLADDER	6.7851E-08	1.600E-07	-57.6
BRAIN	6.8380E-08	1.598E-07	-57.2
BREAST	6.8635E-08	1.599E-07	-57.1
GALL BLADDER	6.8311E-08	N/A	N/A
HEART	6.9654E-08	N/A	N/A
KIDNEYS	6.8626E-08	8.541E-07	-92.0
LIVER	8.4594E-08	1.564E-06	-94.6
MUSCLE	6.8464E-08	1.599E-07	-57.2
OVARIES	6.8757E-08	3.197E-07	-78.5
PANCREAS	6.8853E-08	1.604E-07	-57.1
TESTES	6.7585E-08	3.213E-07	-79.0
THYROID	6.8371E-08	1.597E-07	-57.2
R.B.M.	7.0386E-07	3.228E-06	-78.2
BONE SURFACE	7.2364E-06	3.637E-05	-80.1
STOMACH	6.8350E-08	1.598E-07	-57.2
S.I.	6.8801E-08	1.605E-07	-57.1
U.L.I.	7.2843E-08	1.956E-07	-62.8
L.L.I.	8.3493E-08	2.676E-07	-68.8
SKIN	6.7926E-08	1.592E-07	-57.3
SPLEEN	6.8550E-08	1.571E-07	-56.4
THYMUS	6.9016E-08	1.604E-07	-57.0
UTERUS	6.8158E-08	1.597E-07	-57.3
ET	9.3496E-06	9.443E-06	-1.0
LUNG	6.0756E-06	6.178E-06	-1.7
COLON	7.7448E-08	2.267E-07	-65.8
ET1	2.2685E-06	2.359E-06	-3.8
ET2	9.3651E-06	9.459E-06	-1.0
LN(ET)	9.8273E-07	1.074E-06	-8.5
BBsec	1.1296E-05	1.141E-05	-1.0
BBbas	4.3436E-06	4.444E-06	-2.3
bb	4.0000E-06	4.085E-06	-2.1
AI	6.4146E-06	6.505E-06	-1.4
LN(TH)	3.5130E-06	3.605E-06	-2.6
ESOPHAGUS	6.9016E-08	1.604E-07	-57.0
REMAINDER	**4.7090E-06**	**1.714E-07**	**2647.4**
C.E.D.	**1.1712E-06**	**1.723E-06**	**-32.0**
Maximum			**2647.4**

C.10.75.2. Acute Ingestion (f_1 = 0.2)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.3436E-08	1.492E-07	-37.4
URIN BLADDER	9.2053E-08	1.480E-07	-37.8
BRAIN	9.2600E-08	1.482E-07	-37.5
BREAST	9.1667E-08	1.472E-07	-37.7
GALL BLADDER	9.2232E-08	N/A	N/A
HEART	9.2115E-08	N/A	N/A
KIDNEYS	9.2635E-08	4.217E-07	-78.0
LIVER	8.5976E-08	1.022E-06	-91.6
MUSCLE	9.2294E-08	1.479E-07	-37.6
OVARIES	9.3452E-08	2.029E-07	-53.9
PANCREAS	9.2461E-08	1.482E-07	-37.6
TESTES	9.1653E-08	2.021E-07	-54.6
THYROID	9.2139E-08	1.477E-07	-37.6
R.B.M.	9.3971E-07	2.285E-06	-58.9
BONE SURFACE	9.7173E-06	2.242E-05	-56.7
STOMACH	9.2029E-08	1.476E-07	-37.6
S.I.	9.3483E-08	1.493E-07	-37.4
U.L.I.	1.0020E-07	1.694E-07	-40.9
L.L.I.	1.1953E-07	2.156E-07	-44.6
SKIN	9.1808E-08	1.474E-07	-37.7
SPLEEN	9.2029E-08	1.450E-07	-36.5
THYMUS	9.1940E-08	1.475E-07	-37.7
UTERUS	9.2476E-08	1.481E-07	-37.6
ET	9.2139E-08	1.477E-07	-37.6
LUNG	9.2225E-08	1.480E-07	-37.7
COLON	1.0856E-07	1.894E-07	-42.7
ET1	9.2139E-08	1.477E-07	-37.6
ET2	9.2139E-08	1.477E-07	-37.6
LN(ET)	9.2139E-08	1.477E-07	-37.6
BBsec	9.2225E-08	1.479E-07	-37.6
BBbas	9.2225E-08	1.479E-07	-37.6
bb	9.2225E-08	1.479E-07	-37.6
AI	9.2225E-08	1.479E-07	-37.6
LN(TH)	9.2225E-08	1.479E-07	-37.6
ESOPHAGUS	9.1940E-08	1.475E-07	-37.7
REMAINDER	**9.2336E-08**	**1.507E-07**	**-38.7**
C.E.D.	**2.9199E-07**	**6.700E-07**	**-56.4**
Maximum			**-91.6**

C.10.76. ^{103}Ru – Ruthenium-103

Maximum difference in ***Effective Dose***: **-0.22%** (Inhalation – types “M”/”S”).
Maximum difference in ***Organ Dose***: **-0.27%** (Inhalation – type “S” – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.05%**.

C.10.76.1. Acute Inhalation (Type F: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.3278E-10	4.3280E-10	0.00
URIN BLADDER	5.3430E-10	5.3430E-10	0.00
BRAIN	3.5093E-10	3.5090E-10	0.01
BREAST	3.1638E-10	3.1640E-10	-0.01
GALL BLADDER	4.5114E-10	N/A	N/A
HEART	4.2537E-10	N/A	N/A
KIDNEYS	4.1807E-10	4.1810E-10	-0.01
LIVER	4.1747E-10	4.1750E-10	-0.01
MUSCLE	3.8961E-10	3.8960E-10	0.00
OVARIES	5.4915E-10	5.4920E-10	-0.01
PANCREAS	4.5362E-10	4.5360E-10	0.00
TESTES	3.7837E-10	3.7840E-10	-0.01
THYROID	4.0207E-10	4.0210E-10	-0.01
R.B.M.	4.2023E-10	4.2020E-10	0.01
BONE SURFACE	4.3324E-10	4.3320E-10	0.01
STOMACH	4.3786E-10	4.3790E-10	-0.01
S.I.	5.7805E-10	5.7810E-10	-0.01
U.L.I.	9.8653E-10	9.8650E-10	0.00
L.L.I.	1.9507E-09	1.9510E-09	-0.02
SKIN	3.0198E-10	3.0200E-10	-0.01
SPLEEN	4.1443E-10	4.1440E-10	0.01
THYMUS	4.0374E-10	4.0380E-10	-0.01
UTERUS	4.9368E-10	4.9370E-10	0.00
ET	5.2013E-09	5.2010E-09	0.01
LUNG	3.9618E-10	3.9660E-10	-0.11
COLON	1.4035E-09	1.4030E-09	0.04
ET1	8.5110E-07	8.5100E-07	0.01
ET2	4.3547E-09	4.3540E-09	0.02
LN(ET)	4.2121E-09	4.2120E-09	0.00
BBsec	4.2319E-10	4.2330E-10	-0.03
BBbas	4.0771E-10	4.0780E-10	-0.02
bb	3.8987E-10	3.8990E-10	-0.01
AI	3.8326E-10	3.8330E-10	-0.01
LN(TH)	3.8272E-10	3.8270E-10	0.01
ESOPHAGUS	4.0374E-10	4.0380E-10	-0.01
REMAINDER	**2.7970E-09**	**2.7970E-09**	**0.00**
C.E.D.	**6.7966E-10**	**6.7970E-10**	**-0.01**
Maximum			**-0.11**

C.10.76.2. Acute Inhalation (Type M: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.3265E-10	2.3260E-10	0.02
URIN BLADDER	1.6618E-10	1.6620E-10	-0.01
BRAIN	9.0747E-11	9.0750E-11	0.00
BREAST	2.0812E-10	2.0810E-10	0.01
GALL BLADDER	1.8845E-10	N/A	N/A
HEART	3.3493E-10	N/A	N/A
KIDNEYS	1.4984E-10	1.4980E-10	0.03
LIVER	2.1072E-10	2.1070E-10	0.01
MUSCLE	1.6402E-10	1.6400E-10	0.01
OVARIES	2.9863E-10	2.9860E-10	0.01
PANCREAS	2.1174E-10	2.1170E-10	0.02
TESTES	9.5202E-11	9.5200E-11	0.00
THYROID	1.4664E-10	1.4660E-10	0.03
R.B.M.	1.9671E-10	1.9670E-10	0.01
BONE SURFACE	1.6340E-10	1.6340E-10	0.00
STOMACH	2.4500E-10	2.4500E-10	0.00
S.I.	3.9336E-10	3.9340E-10	-0.01
U.L.I.	1.1274E-09	1.1270E-09	0.04
L.L.I.	2.7814E-09	2.7810E-09	0.01
SKIN	9.9736E-11	9.9740E-11	0.00
SPLEEN	1.9289E-10	1.9290E-10	-0.01
THYMUS	2.5839E-10	2.5840E-10	0.00
UTERUS	1.8475E-10	1.8480E-10	-0.03
ET	7.2331E-09	7.2330E-09	0.00
LUNG	1.2278E-08	1.2310E-08	-0.26
COLON	1.8426E-09	1.8420E-09	0.03
ET1	8.5095E-07	8.5090E-07	0.01
ET2	6.3908E-09	6.3910E-09	0.00
LN(ET)	4.1052E-09	4.1050E-09	0.00
BBsec	2.9402E-08	2.9460E-08	-0.20
BBbas	1.7310E-08	1.7340E-08	-0.17
bb	1.0246E-08	1.0220E-08	0.25
AI	3.2670E-09	3.2670E-09	0.00
LN(TH)	9.0217E-10	9.0220E-10	0.00
ESOPHAGUS	2.5839E-10	2.5840E-10	0.00
REMAINDER	**1.6923E-10**	**1.6920E-10**	**0.02**
C.E.D.	**1.8678E-09**	**1.8720E-09**	**-0.22**
Maximum			**-0.26**

C.10.76.3 Acute Inhalation (Type S: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.2881E-10	2.2880E-10	0.00
URIN BLADDER	1.0830E-10	1.0830E-10	0.00
BRAIN	5.2022E-11	5.2020E-11	0.00
BREAST	2.1982E-10	2.1980E-10	0.01
GALL BLADDER	1.5570E-10	N/A	N/A
HEART	3.7013E-10	N/A	N/A
KIDNEYS	1.1609E-10	1.1610E-10	-0.01
LIVER	2.0084E-10	2.0080E-10	0.02
MUSCLE	1.3991E-10	1.3990E-10	0.01
OVARIES	2.5726E-10	2.5730E-10	-0.02
PANCREAS	1.9386E-10	1.9390E-10	-0.02
TESTES	5.1017E-11	5.1020E-11	-0.01
THYROID	1.1792E-10	1.1790E-10	0.02
R.B.M.	1.7593E-10	1.7590E-10	0.02
BONE SURFACE	1.3222E-10	1.3220E-10	0.02
STOMACH	2.2665E-10	2.2660E-10	0.02
S.I.	3.6158E-10	3.6160E-10	-0.01
U.L.I.	1.1335E-09	1.1330E-09	0.04
L.L.I.	2.8629E-09	2.8630E-09	0.00
SKIN	7.3866E-11	7.3860E-11	0.01
SPLEEN	1.7695E-10	1.7690E-10	0.03
THYMUS	2.6928E-10	2.6930E-10	-0.01
UTERUS	1.3609E-10	1.3610E-10	-0.01
ET	8.0733E-09	8.0730E-09	0.00
LUNG	1.5229E-08	1.5270E-08	-0.27
COLON	1.8813E-09	1.8810E-09	0.02
ET1	8.5097E-07	8.5090E-07	0.01
ET2	7.2327E-09	7.2320E-09	0.01
LN(ET)	4.1444E-09	4.1440E-09	0.01
BBsec	3.6022E-08	3.6090E-08	-0.19
BBbas	2.1263E-08	2.1300E-08	-0.17
bb	1.2686E-08	1.2660E-08	0.21
AI	4.4012E-09	4.4010E-09	0.00
LN(TH)	1.1929E-09	1.1930E-09	-0.01
ESOPHAGUS	2.6928E-10	2.6930E-10	-0.01
REMAINDER	**1.4466E-10**	**1.4460E-10**	**0.04**
C.E.D.	**2.2081E-09**	**2.2130E-09**	**-0.22**
Maximum			**-0.27**

C.10.76.4 Acute Ingestion (f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.0187E-10	1.0190E-10	-0.03
URIN BLADDER	2.4071E-10	2.4070E-10	0.00
BRAIN	5.7595E-11	5.7590E-11	0.01
BREAST	5.8822E-11	5.8820E-11	0.00
GALL BLADDER	2.1606E-10	N/A	N/A
HEART	8.3773E-11	N/A	N/A
KIDNEYS	1.3539E-10	1.3540E-10	-0.01
LIVER	1.1258E-10	1.1260E-10	-0.02
MUSCLE	1.1943E-10	1.1940E-10	0.03
OVARIES	5.7251E-10	5.7250E-10	0.00
PANCREAS	1.3381E-10	1.3380E-10	0.01
TESTES	1.1352E-10	1.1350E-10	0.02
THYROID	6.7047E-11	6.7040E-11	0.01
R.B.M.	1.6040E-10	1.6040E-10	0.00
BONE SURFACE	1.1023E-10	1.1020E-10	0.03
STOMACH	3.0791E-10	3.0790E-10	0.00
S.I.	7.9379E-10	7.9380E-10	0.00
U.L.I.	2.5688E-09	2.5690E-09	-0.01
L.L.I.	6.5909E-09	6.5910E-09	0.00
SKIN	6.9905E-11	6.9900E-11	0.01
SPLEEN	1.1513E-10	1.1510E-10	0.03
THYMUS	7.0471E-11	7.0470E-11	0.00
UTERUS	2.9706E-10	2.9710E-10	-0.01
ET	6.7047E-11	6.7040E-11	0.01
LUNG	7.2131E-11	7.2200E-11	-0.10
COLON	4.3081E-09	4.3060E-09	0.05
ET1	6.7047E-11	6.7040E-11	0.01
ET2	6.7047E-11	6.7040E-11	0.01
LN(ET)	6.7047E-11	6.7040E-11	0.01
BBsec	7.2131E-11	7.2130E-11	0.00
BBbas	7.2131E-11	7.2130E-11	0.00
bb	7.2131E-11	7.2130E-11	0.00
AI	7.2131E-11	7.2130E-11	0.00
LN(TH)	7.2131E-11	7.2130E-11	0.00
ESOPHAGUS	7.0471E-11	7.0470E-11	0.00
REMAINDER	**1.3123E-10**	**1.3130E-10**	**-0.05**
C.E.D.	**7.3217E-10**	**7.3200E-10**	**0.02**
Maximum			**-0.10**

C.10.77. ^{106}Ru – Ruthenium-106

Maximum difference in ***Effective Dose***: **-0.13%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.14%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.05%**.

C.10.77.1. Acute Inhalation (Type F: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.4526E-09	8.4520E-09	0.01
URIN BLADDER	9.7341E-09	9.7340E-09	0.00
BRAIN	8.2936E-09	8.2930E-09	0.01
BREAST	8.2492E-09	8.2490E-09	0.00
GALL BLADDER	8.4507E-09	N/A	N/A
HEART	8.4390E-09	N/A	N/A
KIDNEYS	8.4160E-09	8.4160E-09	0.00
LIVER	8.4207E-09	8.4210E-09	0.00
MUSCLE	8.3527E-09	8.3530E-09	0.00
OVARIES	8.5140E-09	8.5140E-09	0.00
PANCREAS	8.4806E-09	8.4810E-09	0.00
TESTES	8.3493E-09	8.3490E-09	0.00
THYROID	8.3867E-09	8.3870E-09	0.00
R.B.M.	8.3974E-09	8.3970E-09	0.00
BONE SURFACE	8.4309E-09	8.4310E-09	0.00
STOMACH	8.7194E-09	8.7190E-09	0.00
S.I.	9.2633E-09	9.2630E-09	0.00
U.L.I.	1.4357E-08	1.4360E-08	-0.02
L.L.I.	2.5793E-08	2.5790E-08	0.01
SKIN	8.2166E-09	8.2160E-09	0.01
SPLEEN	8.4145E-09	8.4140E-09	0.01
THYMUS	8.3897E-09	8.3900E-09	0.00
UTERUS	8.4989E-09	8.4990E-09	0.00
ET	1.1928E-08	1.1930E-08	-0.02
LUNG	8.3844E-09	8.3930E-09	-0.10
COLON	1.9302E-08	1.9300E-08	0.01
ET1	1.6424E-06	1.6420E-06	0.02
ET2	1.0296E-08	1.0300E-08	-0.04
LN(ET)	9.9897E-09	9.9890E-09	0.01
BBsec	8.4192E-09	8.4190E-09	0.00
BBbas	8.4158E-09	8.4160E-09	0.00
bb	8.3704E-09	8.3700E-09	0.00
AI	8.3655E-09	8.3650E-09	0.01
LN(TH)	8.3564E-09	8.3560E-09	0.00
ESOPHAGUS	8.3897E-09	8.3900E-09	0.00
REMAINDER	**8.3726E-09**	**8.3720E-09**	**0.01**
C.E.D.	**9.8233E-09**	**9.8240E-09**	**-0.01**
Maximum			**-0.10**

C.10.77.2. Acute Inhalation (Type M: f_1 = 0.05)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.3288E-09	2.3290E-09	-0.01
URIN BLADDER	2.5313E-09	2.5310E-09	0.01
BRAIN	2.1485E-09	2.1480E-09	0.02
BREAST	2.2818E-09	2.2820E-09	-0.01
GALL BLADDER	2.2470E-09	N/A	N/A
HEART	2.4430E-09	N/A	N/A
KIDNEYS	2.2238E-09	2.2240E-09	-0.01
LIVER	2.2974E-09	2.2970E-09	0.02
MUSCLE	2.2238E-09	2.2240E-09	-0.01
OVARIES	2.2758E-09	2.2760E-09	-0.01
PANCREAS	2.3002E-09	2.3000E-09	0.01
TESTES	2.1569E-09	2.1570E-09	0.00
THYROID	2.2233E-09	2.2230E-09	0.01
R.B.M.	2.2575E-09	2.2570E-09	0.02
BONE SURFACE	2.2383E-09	2.2380E-09	0.01
STOMACH	2.9388E-09	2.9390E-09	-0.01
S.I.	3.8868E-09	3.8870E-09	-0.01
U.L.I.	1.2417E-08	1.2420E-08	-0.02
L.L.I.	3.2023E-08	3.2020E-08	0.01
SKIN	2.1507E-09	2.1510E-09	-0.01

SPLEEN	2.2766E-09	2.2770E-09	-0.02
THYMUS	2.3478E-09	2.3480E-09	-0.01
UTERUS	2.2268E-09	2.2270E-09	-0.01
ET	1.2334E-08	1.2340E-08	-0.05
LUNG	1.0326E-07	1.0340E-07	-0.14
COLON	2.0895E-08	2.0890E-08	0.02
ET1	1.6364E-06	1.6360E-06	0.02
ET2	1.0711E-08	1.0710E-08	0.01
LN(ET)	8.3212E-09	8.3220E-09	-0.01
BBsec	1.2606E-07	1.2620E-07	-0.11
BBbas	1.2362E-07	1.2370E-07	-0.06
bb	9.4801E-08	9.4790E-08	0.01
AI	9.0397E-08	9.0400E-08	0.00
LN(TH)	1.4480E-08	1.4480E-08	0.00
ESOPHAGUS	2.3478E-09	2.3480E-09	-0.01
REMAINDER	**2.2606E-09**	**2.2610E-09**	**-0.02**
C.E.D.	**1.6718E-08**	**1.6740E-08**	**-0.13**
Maximum			**-0.14**

C.10.77.3. Acute Inhalation (Type S: $f_1 = 0.05$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.1297E-09	1.1300E-09	-0.03
URIN BLADDER	8.5032E-10	8.5030E-10	0.00
BRAIN	7.2766E-10	7.2760E-10	0.01
BREAST	1.1324E-09	1.1320E-09	0.04
GALL BLADDER	8.7414E-10	N/A	N/A
HEART	1.4603E-09	N/A	N/A
KIDNEYS	8.5053E-10	8.5050E-10	0.00
LIVER	1.0586E-09	1.0590E-09	-0.04
MUSCLE	8.8785E-10	8.8780E-10	0.01
OVARIES	8.2482E-10	8.2480E-10	0.00
PANCREAS	1.0247E-09	1.0250E-09	-0.03
TESTES	7.1029E-10	7.1030E-10	0.00
THYROID	8.7732E-10	8.7730E-10	0.00
R.B.M.	9.4613E-10	9.4610E-10	0.00
BONE SURFACE	8.8390E-10	8.8390E-10	0.00
STOMACH	1.6766E-09	1.6770E-09	-0.02
S.I.	2.5853E-09	2.5850E-09	0.01
U.L.I.	1.1605E-08	1.1610E-08	-0.04
L.L.I.	3.2371E-08	3.2370E-08	0.00
SKIN	7.8235E-10	7.8230E-10	0.01
SPLEEN	1.0039E-09	1.0040E-09	-0.01
THYMUS	1.2225E-09	1.2220E-09	0.04
UTERUS	7.6758E-10	7.6750E-10	0.01
ET	2.3173E-08	2.3170E-08	0.01
LUNG	2.6040E-07	2.6070E-07	-0.12
COLON	2.0585E-08	2.0580E-08	0.02
ET1	1.6354E-06	1.6350E-06	0.02
ET2	2.1534E-08	2.1540E-08	-0.03
LN(ET)	4.7383E-08	4.7380E-08	0.01
BBsec	2.7175E-07	2.7190E-07	-0.06
BBbas	2.6939E-07	2.6950E-07	-0.04
bb	2.5695E-07	2.5690E-07	0.02
AI	2.5424E-07	2.5420E-07	0.02
LN(TH)	7.5379E-08	7.5380E-08	0.00
ESOPHAGUS	1.2225E-09	1.2220E-09	0.04
REMAINDER	**9.2751E-10**	**9.2730E-10**	**0.02**
C.E.D.	**3.4518E-08**	**3.4550E-08**	**-0.09**
Maximum			**-0.12**

C.10.77.4. Acute Ingestion ($f_1 = 0.05$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.4635E-09	1.4630E-09	0.03
URIN BLADDER	1.7359E-09	1.7360E-09	-0.01
BRAIN	1.4230E-09	1.4230E-09	0.00
BREAST	1.4186E-09	1.4190E-09	-0.03
GALL BLADDER	1.5099E-09	N/A	N/A
HEART	1.4540E-09	N/A	N/A
KIDNEYS	1.4727E-09	1.4730E-09	-0.02
LIVER	1.4640E-09	1.4640E-09	0.00
MUSCLE	1.4572E-09	1.4570E-09	0.01
OVARIES	1.6689E-09	1.6690E-09	-0.01
PANCREAS	1.4805E-09	1.4800E-09	0.03
TESTES	1.4547E-09	1.4550E-09	-0.02
THYROID	1.4393E-09	1.4390E-09	0.02
R.B.M.	1.4800E-09	1.4800E-09	0.00
BONE SURFACE	1.4632E-09	1.4630E-09	0.01
STOMACH	3.1165E-09	3.1160E-09	0.02
S.I.	5.5235E-09	5.5230E-09	0.01
U.L.I.	2.5449E-08	2.5450E-08	0.00
L.L.I.	7.1429E-08	7.1430E-08	0.00
SKIN	1.4190E-09	1.4190E-09	0.00
SPLEEN	1.4640E-09	1.4640E-09	0.00
THYMUS	1.4412E-09	1.4410E-09	0.01
UTERUS	1.5510E-09	1.5510E-09	0.00
ET	1.4393E-09	1.4390E-09	0.02
LUNG	1.4379E-09	1.4390E-09	-0.08
COLON	4.5333E-08	4.5310E-08	0.05
ET1	1.4393E-09	1.4390E-09	0.02
ET2	1.4393E-09	1.4390E-09	0.02
LN(ET)	1.4393E-09	1.4390E-09	0.02
BBsec	1.4379E-09	1.4380E-09	-0.01
BBbas	1.4379E-09	1.4380E-09	-0.01
bb	1.4379E-09	1.4380E-09	-0.01
AI	1.4379E-09	1.4380E-09	-0.01
LN(TH)	1.4379E-09	1.4380E-09	-0.01
ESOPHAGUS	1.4412E-09	1.4410E-09	0.01
REMAINDER	**1.5408E-09**	**1.5410E-09**	**-0.01**
C.E.D.	**6.9787E-09**	**6.9760E-09**	**0.04**
Maximum			**-0.08**

C.10.78A. ^{35}S – Sulfur-35 (Organic Particulate)

Difference in ***Effective Dose***: **-0.01%** (Ingestion).
Maximum difference in ***Organ Dose***: **-0.10%** (Ingestion – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.01%**.

C.10.78A.1 Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.5355E-10	7.5350E-10	0.01
URIN BLADDER	8.3359E-10	8.3360E-10	0.00
BRAIN	7.5355E-10	7.5350E-10	0.01
BREAST	7.5355E-10	7.5350E-10	0.01
GALL BLADDER	7.5355E-10	N/A	N/A
HEART	7.5355E-10	N/A	N/A
KIDNEYS	7.5355E-10	7.5350E-10	0.01
LIVER	7.5355E-10	7.5350E-10	0.01
MUSCLE	7.5355E-10	7.5350E-10	0.01
OVARIES	7.5355E-10	7.5350E-10	0.01
PANCREAS	7.5355E-10	7.5350E-10	0.01
TESTES	7.5355E-10	7.5350E-10	0.01
THYROID	7.5355E-10	7.5350E-10	0.01
R.B.M.	7.5355E-10	7.5350E-10	0.01
BONE SURFACE	7.5355E-10	7.5350E-10	0.01
STOMACH	8.0978E-10	8.0980E-10	0.00
S.I.	7.5495E-10	7.5490E-10	0.01
U.L.I.	7.9418E-10	7.9410E-10	0.01
L.L.I.	8.7181E-10	8.7180E-10	0.00
SKIN	7.5355E-10	7.5350E-10	0.01
SPLEEN	7.5355E-10	7.5350E-10	0.01
THYMUS	7.5355E-10	7.5350E-10	0.01
UTERUS	7.5355E-10	7.5350E-10	0.01
ET	7.5355E-10	7.5350E-10	0.01
LUNG	7.5355E-10	7.5430E-10	-0.10
COLON	8.2775E-10	8.2770E-10	0.01
ET1	7.5355E-10	7.5350E-10	0.01
ET2	7.5355E-10	7.5350E-10	0.01
LN(ET)	7.5355E-10	7.5350E-10	0.01
BBsec	7.5355E-10	7.5350E-10	0.01
BBbas	7.5355E-10	7.5350E-10	0.01
bb	7.5355E-10	7.5350E-10	0.01
AI	7.5355E-10	7.5350E-10	0.01
LN(TH)	7.5355E-10	7.5350E-10	0.01
ESOPHAGUS	7.5355E-10	7.5350E-10	0.01
REMAINDER	**7.5358E-10**	**7.5350E-10**	**0.01**
C.E.D.	**7.7321E-10**	**7.7330E-10**	**-0.01**
Maximum			**-0.10**

C.10.78B. ^{35}S – Sulfur-35 (Inorganic Particulate)

Maximum difference in ***Effective Dose***: **-0.31%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.30%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.04%**.

C.10.78B.1. Acute Inhalation (Type F: f_1 = 0.8)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.2722E-11	4.2730E-11	-0.02
URIN BLADDER	1.2845E-10	1.2850E-10	-0.04
BRAIN	4.2722E-11	4.2730E-11	-0.02
BREAST	4.2722E-11	4.2730E-11	-0.02
GALL BLADDER	4.2722E-11	N/A	N/A
HEART	4.2722E-11	N/A	N/A
KIDNEYS	4.2722E-11	4.2730E-11	-0.02
LIVER	4.2722E-11	4.2730E-11	-0.02
MUSCLE	4.2722E-11	4.2730E-11	-0.02
OVARIES	4.2722E-11	4.2730E-11	-0.02
PANCREAS	4.2722E-11	4.2730E-11	-0.02
TESTES	4.2722E-11	4.2730E-11	-0.02
THYROID	4.2722E-11	4.2730E-11	-0.02
R.B.M.	4.2722E-11	4.2730E-11	-0.02
BONE SURFACE	4.2722E-11	4.2730E-11	-0.02
STOMACH	5.3967E-11	5.3970E-11	-0.01
S.I.	4.8343E-11	4.8350E-11	-0.01
U.L.I.	1.1104E-10	1.1100E-10	0.04
L.L.I.	2.4158E-10	2.4160E-10	-0.01
SKIN	4.2722E-11	4.2730E-11	-0.02
SPLEEN	4.2722E-11	4.2730E-11	-0.02
THYMUS	4.2722E-11	4.2730E-11	-0.02
UTERUS	4.2722E-11	4.2730E-11	-0.02
ET	6.5674E-10	6.5670E-10	0.01
LUNG	5.2089E-11	5.2170E-11	-0.16
COLON	1.6749E-10	1.6750E-10	-0.01
ET1	5.3800E-07	5.3790E-07	0.02
ET2	1.1894E-10	1.1890E-10	0.03
LN(ET)	4.2722E-11	4.2730E-11	-0.02
BBsec	7.1992E-11	7.2060E-11	-0.09
BBbas	5.7310E-11	5.7350E-11	-0.07
bb	4.8594E-11	4.8580E-11	0.03
AI	4.3049E-11	4.3050E-11	0.00
LN(TH)	4.2722E-11	4.2730E-11	-0.02
ESOPHAGUS	**4.2722E-11**	**4.2730E-11**	**-0.02**
REMAINDER	**3.4979E-10**	**3.4980E-10**	**0.00**
C.E.D.	**7.9807E-11**	**7.9820E-11**	**-0.02**
Maximum			**-0.16**

C.10.78B.2. Acute Inhalation (Type M: f_1 = 0.8)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.6194E-11	3.6200E-11	-0.02
URIN BLADDER	1.0883E-10	1.0880E-10	0.03
BRAIN	3.6194E-11	3.6200E-11	-0.02
BREAST	3.6194E-11	3.6200E-11	-0.02
GALL BLADDER	3.6194E-11	N/A	N/A
HEART	3.6194E-11	N/A	N/A
KIDNEYS	3.6194E-11	3.6200E-11	-0.02
LIVER	3.6194E-11	3.6200E-11	-0.02
MUSCLE	3.6194E-11	3.6200E-11	-0.02
OVARIES	3.6194E-11	3.6200E-11	-0.02
PANCREAS	3.6194E-11	3.6200E-11	-0.02
TESTES	3.6194E-11	3.6200E-11	-0.02
THYROID	3.6194E-11	3.6200E-11	-0.02
R.B.M.	3.6194E-11	3.6200E-11	-0.02
BONE SURFACE	3.6194E-11	3.6200E-11	-0.02
STOMACH	5.9395E-11	5.9400E-11	-0.01
S.I.	4.7791E-11	4.7800E-11	-0.02
U.L.I.	1.3527E-10	1.3530E-10	-0.02
L.L.I.	3.2457E-10	3.2460E-10	-0.01
SKIN	3.6194E-11	3.6200E-11	-0.02

SPLEEN	3.6194E-11	3.6200E-11	-0.02
THYMUS	3.6194E-11	3.6200E-11	-0.02
UTERUS	3.6194E-11	3.6200E-11	-0.02
ET	2.5493E-09	2.5500E-09	-0.03
LUNG	8.6047E-09	8.6310E-09	-0.30
COLON	2.1713E-10	2.1710E-10	0.01
ET1	5.3799E-07	5.3790E-07	0.02
ET2	2.0152E-09	2.0160E-09	-0.04
LN(ET)	8.1238E-11	8.1250E-11	-0.01
BBsec	2.3866E-08	2.3920E-08	-0.23
BBbas	1.2155E-08	1.2180E-08	-0.21
bb	6.0261E-09	6.0130E-09	0.22
AI	1.8028E-09	1.8030E-09	-0.01
LN(TH)	1.8718E-10	1.8720E-10	-0.01
ESOPHAGUS	**3.6194E-11**	**3.6200E-11**	**-0.02**
REMAINDER	**3.7661E-11**	**3.7670E-11**	**-0.02**
C.E.D.	**1.0926E-09**	**1.0960E-09**	**-0.31**
Maximum			**-0.31**

C.10.78B.3. Acute Ingestion (f_1 = 0.8)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.7462E-11	7.7460E-11	0.00
URIN BLADDER	2.3291E-10	2.3290E-10	0.00
BRAIN	7.7462E-11	7.7460E-11	0.00
BREAST	7.7462E-11	7.7460E-11	0.00
GALL BLADDER	7.7462E-11	N/A	N/A
HEART	7.7462E-11	N/A	N/A
KIDNEYS	7.7462E-11	7.7460E-11	0.00
LIVER	7.7462E-11	7.7460E-11	0.00
MUSCLE	7.7462E-11	7.7460E-11	0.00
OVARIES	7.7462E-11	7.7460E-11	0.00
PANCREAS	7.7462E-11	7.7460E-11	0.00
TESTES	7.7462E-11	7.7460E-11	0.00
THYROID	7.7462E-11	7.7460E-11	0.00
R.B.M.	7.7462E-11	7.7460E-11	0.00
BONE SURFACE	7.7462E-11	7.7460E-11	0.00
STOMACH	1.3370E-10	1.3370E-10	0.00
S.I.	1.0557E-10	1.0560E-10	-0.03
U.L.I.	3.0931E-10	3.0930E-10	0.00
L.L.I.	7.5235E-10	7.5230E-10	0.01
SKIN	7.7462E-11	7.7460E-11	0.00
SPLEEN	7.7462E-11	7.7460E-11	0.00
THYMUS	7.7462E-11	7.7460E-11	0.00
UTERUS	7.7462E-11	7.7460E-11	0.00
ET	7.7462E-11	7.7460E-11	0.00
LUNG	7.7462E-11	7.7540E-11	-0.10
COLON	5.0090E-10	5.0090E-10	0.00
ET1	7.7462E-11	7.7460E-11	0.00
ET2	7.7462E-11	7.7460E-11	0.00
LN(ET)	7.7462E-11	7.7460E-11	0.00
BBsec	7.7462E-11	7.7460E-11	0.00
BBbas	7.7462E-11	7.7460E-11	0.00
bb	7.7462E-11	7.7460E-11	0.00
AI	7.7462E-11	7.7460E-11	0.00
LN(TH)	7.7462E-11	7.7460E-11	0.00
ESOPHAGUS	7.7462E-11	7.7460E-11	0.00
REMAINDER	**7.8047E-11**	**7.8050E-11**	**0.00**
C.E.D.	**1.4282E-10**	**1.4280E-10**	**0.01**
Maximum			**-0.10**

C.10.78B.4. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.6737E-12	9.6740E-12	0.00
URIN BLADDER	2.9086E-11	2.9090E-11	-0.01
BRAIN	9.6737E-12	9.6740E-12	0.00
BREAST	9.6737E-12	9.6740E-12	0.00
GALL BLADDER	9.6737E-12	N/A	N/A
HEART	9.6737E-12	N/A	N/A
KIDNEYS	9.6737E-12	9.6740E-12	0.00
LIVER	9.6737E-12	9.6740E-12	0.00
MUSCLE	9.6737E-12	9.6740E-12	0.00
OVARIES	9.6737E-12	9.6740E-12	0.00
PANCREAS	9.6737E-12	9.6740E-12	0.00
TESTES	9.6737E-12	9.6740E-12	0.00
THYROID	9.6737E-12	9.6740E-12	0.00
R.B.M.	9.6737E-12	9.6740E-12	0.00
BONE SURFACE	9.6737E-12	9.6740E-12	0.00
STOMACH	6.5909E-11	6.5910E-11	0.00
S.I.	1.3605E-10	1.3600E-10	0.04
U.L.I.	7.7911E-10	7.7910E-10	0.00
L.L.I.	2.2494E-09	2.2490E-09	0.02
SKIN	9.6737E-12	9.6740E-12	0.00
SPLEEN	9.6737E-12	9.6740E-12	0.00
THYMUS	9.6737E-12	9.6740E-12	0.00
UTERUS	9.6737E-12	9.6740E-12	0.00
ET	9.6737E-12	9.6740E-12	0.00
LUNG	9.6737E-12	9.6840E-12	-0.11
COLON	1.4149E-09	1.4150E-09	-0.01
ET1	9.6737E-12	9.6740E-12	0.00
ET2	9.6737E-12	9.6740E-12	0.00
LN(ET)	9.6737E-12	9.6740E-12	0.00
BBsec	9.6737E-12	9.6740E-12	0.00
BBbas	9.6737E-12	9.6740E-12	0.00
bb	9.6737E-12	9.6740E-12	0.00
AI	9.6737E-12	9.6740E-12	0.00
LN(TH)	9.6737E-12	9.6740E-12	0.00
ESOPHAGUS	9.6737E-12	9.6740E-12	0.00
REMAINDER	**1.2303E-11**	**1.2310E-11**	**-0.06**
C.E.D.	**1.8615E-10**	**1.8610E-10**	**0.03**
Maximum			**-0.11**

C.10.79. ^{124}Sb – Antimony-124

Maximum difference in ***Effective Dose***: **-0.21%** (Inhalation – type M).
Maximum difference in ***Organ Dose***: **-0.31%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.05%**.

C.10.79.1. Acute Inhalation (Type F: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.8539E-10	8.8550E-10	-0.01
URIN BLADDER	1.1574E-09	1.1570E-09	0.03
BRAIN	5.9945E-10	5.9940E-10	0.01
BREAST	4.6058E-10	4.6050E-10	0.02
GALL BLADDER	8.3318E-10	N/A	N/A
HEART	6.1678E-10	N/A	N/A
KIDNEYS	7.5156E-10	7.5160E-10	-0.01
LIVER	1.4983E-09	1.4990E-09	-0.05
MUSCLE	6.4434E-10	6.4430E-10	0.01
OVARIES	1.1003E-09	1.1000E-09	0.03
PANCREAS	7.5734E-10	7.5740E-10	-0.01
TESTES	4.9887E-10	4.9880E-10	0.01
THYROID	6.0207E-10	6.0200E-10	0.01
R.B.M.	2.8051E-09	2.8060E-09	-0.03
BONE SURFACE	7.8945E-09	7.8970E-09	-0.03
STOMACH	7.3467E-10	7.3470E-10	0.00
S.I.	1.2077E-09	1.2080E-09	-0.02
U.L.I.	2.7146E-09	2.7150E-09	-0.01
L.L.I.	6.1196E-09	6.1200E-09	-0.01
SKIN	4.5935E-10	4.5930E-10	0.01
SPLEEN	6.0641E-10	6.0640E-10	0.00
THYMUS	5.9868E-10	5.9870E-10	0.00
UTERUS	8.1362E-10	8.1360E-10	0.00
ET	1.5464E-08	1.5460E-08	0.03
LUNG	6.4514E-10	6.4590E-10	-0.12
COLON	4.1871E-09	4.1860E-09	0.03
ET1	1.6777E-06	1.6780E-06	-0.02
ET2	1.3801E-08	1.3800E-08	0.01
LN(ET)	1.3487E-08	1.3490E-08	-0.02
BBsec	6.8718E-10	6.8730E-10	-0.02
BBbas	6.7589E-10	6.7600E-10	-0.02
bb	6.2987E-10	6.2990E-10	0.00
AI	6.2407E-10	6.2410E-10	0.00
LN(TH)	6.2148E-10	6.2150E-10	0.00
ESOPHAGUS	5.9868E-10	5.9870E-10	0.00
REMAINDER	**8.0599E-09**	**8.0590E-09**	**0.01**
C.E.D.	**1.9271E-09**	**1.9270E-09**	**0.01**
Maximum			**-0.12**

C.10.79.2. Acute Inhalation (Type M: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.6285E-10	7.6310E-10	-0.03
URIN BLADDER	4.0072E-10	4.0080E-10	-0.02
BRAIN	1.8621E-10	1.8620E-10	0.01
BREAST	7.3109E-10	7.3130E-10	-0.03
GALL BLADDER	5.3511E-10	N/A	N/A
HEART	1.1871E-09	N/A	N/A
KIDNEYS	4.1660E-10	4.1670E-10	-0.02
LIVER	7.9218E-10	7.9240E-10	-0.03
MUSCLE	4.6368E-10	4.6380E-10	-0.03
OVARIES	8.7393E-10	8.7400E-10	-0.01
PANCREAS	6.2251E-10	6.2270E-10	-0.03
TESTES	1.4946E-10	1.4950E-10	-0.03
THYROID	3.9367E-10	3.9370E-10	-0.01
R.B.M.	8.8640E-10	8.8660E-10	-0.02
BONE SURFACE	1.5032E-09	1.5040E-09	-0.05
STOMACH	7.8259E-10	7.8270E-10	-0.01
S.I.	1.2452E-09	1.2450E-09	0.02
U.L.I.	3.9121E-09	3.9120E-09	0.00
L.L.I.	9.8537E-09	9.8540E-09	0.00
SKIN	2.5689E-10	2.5690E-10	0.00
SPLEEN	5.8762E-10	5.8780E-10	-0.03
THYMUS	8.8480E-10	8.8500E-10	-0.02
UTERUS	4.4548E-10	4.4550E-10	0.00
ET	1.8569E-08	1.8570E-08	-0.01
LUNG	2.8023E-08	2.8110E-08	-0.31
COLON	6.4814E-09	6.4790E-09	0.04
ET1	1.6779E-06	1.6780E-06	-0.01
ET2	1.6910E-08	1.6910E-08	0.00
LN(ET)	1.3997E-08	1.4000E-08	-0.02
BBsec	5.5197E-08	5.5300E-08	-0.19
BBbas	4.7232E-08	4.7320E-08	-0.19
bb	1.8597E-08	1.8590E-08	0.04
AI	1.4330E-08	1.4330E-08	0.00
LN(TH)	3.8254E-09	3.8270E-09	-0.04
ESOPHAGUS	8.8480E-10	8.8500E-10	-0.02
REMAINDER	**4.7727E-10**	**4.7710E-10**	**0.04**
C.E.D.	**4.7172E-09**	**4.7270E-09**	**-0.21**
Maximum			**-0.31**

C.10.79.3. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.8704E-10	3.8710E-10	-0.02
URIN BLADDER	8.5293E-10	8.5290E-10	0.00
BRAIN	1.8144E-10	1.8140E-10	0.02
BREAST	1.6948E-10	1.6940E-10	0.05
GALL BLADDER	7.1159E-10	N/A	N/A
HEART	2.4416E-10	N/A	N/A
KIDNEYS	4.5596E-10	4.5600E-10	-0.01
LIVER	6.3398E-10	6.3410E-10	-0.02
MUSCLE	3.7839E-10	3.7840E-10	0.00
OVARIES	1.8595E-09	1.8600E-09	-0.03
PANCREAS	4.3478E-10	4.3480E-10	0.00
TESTES	3.1588E-10	3.1580E-10	0.03
THYROID	1.8591E-10	1.8590E-10	0.01
R.B.M.	1.1965E-09	1.1970E-09	-0.04
BONE SURFACE	2.7243E-09	2.7250E-09	-0.03
STOMACH	1.0841E-09	1.0840E-09	0.01
S.I.	2.6151E-09	2.6150E-09	0.00
U.L.I.	8.5011E-09	8.5010E-09	0.00
L.L.I.	2.1757E-08	2.1760E-08	-0.01
SKIN	2.1566E-10	2.1560E-10	0.03
SPLEEN	3.4750E-10	3.4750E-10	0.00
THYMUS	1.9491E-10	1.9490E-10	0.01
UTERUS	9.2288E-10	9.2290E-10	0.00
ET	1.8591E-10	1.8590E-10	0.01
LUNG	2.2639E-10	2.2660E-10	-0.09
COLON	1.4233E-08	1.4230E-08	0.02
ET1	1.8591E-10	1.8590E-10	0.01
ET2	1.8591E-10	1.8590E-10	0.01
LN(ET)	1.8591E-10	1.8590E-10	0.01
BBsec	2.2639E-10	2.2640E-10	0.00
BBbas	2.2639E-10	2.2640E-10	0.00
bb	2.2639E-10	2.2640E-10	0.00
AI	2.2639E-10	2.2640E-10	0.00
LN(TH)	2.2639E-10	2.2640E-10	0.00
ESOPHAGUS	1.9491E-10	1.9490E-10	0.01
REMAINDER	**4.1796E-10**	**4.1810E-10**	**-0.03**
C.E.D.	**2.5329E-09**	**2.5320E-09**	**0.04**
Maximum			**-0.09**

C.10.80. ^{125}Sb – Antimony-125

Maximum difference in ***Effective Dose***: **-0.21%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.30%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.07%**.

C.10.80.1. Acute Inhalation (Type F: f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.2090E-09	1.2090E-09	0.00
URIN BLADDER	9.2452E-10	9.2430E-10	0.02
BRAIN	8.0012E-10	7.9990E-10	0.03
BREAST	6.1392E-10	6.1360E-10	0.05
GALL BLADDER	1.0569E-09	N/A	N/A
HEART	8.2760E-10	N/A	N/A
KIDNEYS	9.8385E-10	9.8360E-10	0.03
LIVER	2.2524E-09	2.2530E-09	-0.03
MUSCLE	7.9957E-10	7.9930E-10	0.03
OVARIES	1.0981E-09	1.0980E-09	0.01
PANCREAS	1.0122E-09	1.0120E-09	0.02
TESTES	6.4679E-10	6.4650E-10	0.04
THYROID	7.8689E-10	7.8670E-10	0.02
R.B.M.	4.2363E-09	4.2370E-09	-0.02
BONE SURFACE	2.7093E-08	2.7100E-08	-0.03
STOMACH	8.0555E-10	8.0530E-10	0.03
S.I.	1.0861E-09	1.0860E-09	0.01
U.L.I.	1.4538E-09	1.4540E-09	-0.01
L.L.I.	2.4829E-09	2.4830E-09	0.00
SKIN	5.9521E-10	5.9490E-10	0.05
SPLEEN	8.0231E-10	8.0210E-10	0.03
THYMUS	7.6151E-10	7.6130E-10	0.03
UTERUS	9.3500E-10	9.3480E-10	0.02
ET	5.7737E-09	5.7730E-09	0.01
LUNG	8.6054E-10	8.6120E-10	-0.08
COLON	1.8988E-09	1.8980E-09	0.04
ET1	9.5162E-07	9.5150E-07	0.01
ET2	4.8270E-09	4.8260E-09	0.02
LN(ET)	4.6602E-09	4.6600E-09	0.00
BBsec	8.8804E-10	8.8790E-10	0.02
BBbas	8.7493E-10	8.7480E-10	0.01
bb	8.5292E-10	8.5270E-10	0.03
AI	8.4727E-10	8.4700E-10	0.03
LN(TH)	8.4660E-10	8.4640E-10	0.02
ESOPHAGUS	7.6151E-10	7.6130E-10	0.03
REMAINDER	**8.1106E-10**	**8.1090E-10**	**0.02**
C.E.D.	**1.7402E-09**	**1.7400E-09**	**0.01**
Maximum			**-0.08**

C.10.80.2. Acute Inhalation (Type M: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.4126E-10	6.4130E-10	-0.01
URIN BLADDER	2.5751E-10	2.5750E-10	0.00
BRAIN	2.0025E-10	2.0020E-10	0.02
BREAST	5.3134E-10	5.3130E-10	0.01
GALL BLADDER	3.9516E-10	N/A	N/A
HEART	8.7850E-10	N/A	N/A
KIDNEYS	3.4366E-10	3.4360E-10	0.02
LIVER	8.0771E-10	8.0780E-10	-0.01
MUSCLE	3.5966E-10	3.5960E-10	0.02
OVARIES	4.3725E-10	4.3720E-10	0.01
PANCREAS	5.0321E-10	5.0320E-10	0.00
TESTES	1.5516E-10	1.5510E-10	0.04
THYROID	3.2133E-10	3.2130E-10	0.01
R.B.M.	1.1228E-09	1.1230E-09	-0.02
BONE SURFACE	5.8954E-09	5.8960E-09	-0.01
STOMACH	4.4920E-10	4.4920E-10	0.00
S.I.	5.3115E-10	5.3110E-10	0.01
U.L.I.	1.2597E-09	1.2600E-09	-0.02
L.L.I.	2.9444E-09	2.9450E-09	-0.02
SKIN	2.1310E-10	2.1310E-10	0.00
SPLEEN	4.4911E-10	4.4910E-10	0.00
THYMUS	6.2990E-10	6.2990E-10	0.00
UTERUS	2.8864E-10	2.8860E-10	0.01
ET	1.1568E-08	1.1570E-08	-0.02
LUNG	2.1715E-08	2.1780E-08	-0.30
COLON	1.9882E-09	1.9880E-09	0.01
ET1	9.5156E-07	9.5150E-07	0.01
ET2	1.0632E-08	1.0630E-08	0.02
LN(ET)	5.1357E-09	5.1360E-09	-0.01
BBsec	4.7289E-08	4.7380E-08	-0.19
BBbas	3.3094E-08	3.3160E-08	-0.20
bb	1.4357E-08	1.4340E-08	0.12
AI	1.0652E-08	1.0650E-08	0.02
LN(TH)	3.6729E-09	3.6740E-09	-0.03
ESOPHAGUS	6.2990E-10	6.2990E-10	0.00
REMAINDER	**3.6239E-10**	**3.6220E-10**	**0.05**
C.E.D.	**3.3271E-09**	**3.3340E-09**	**-0.21**
Maximum			**-0.30**

C.10.80.3. Acute Ingestion (f_1 = 0.1)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.2435E-10	4.2430E-10	0.01
URIN BLADDER	4.3469E-10	4.3460E-10	0.02
BRAIN	2.6130E-10	2.6120E-10	0.04
BREAST	2.0715E-10	2.0700E-10	0.07
GALL BLADDER	4.6922E-10	N/A	N/A
HEART	2.8334E-10	N/A	N/A
KIDNEYS	3.7966E-10	3.7960E-10	0.02
LIVER	7.8243E-10	7.8250E-10	-0.01
MUSCLE	3.0876E-10	3.0870E-10	0.02
OVARIES	7.9268E-10	7.9260E-10	0.01
PANCREAS	3.8374E-10	3.8370E-10	0.01
TESTES	2.5493E-10	2.5480E-10	0.05
THYROID	2.5751E-10	2.5740E-10	0.04
R.B.M.	1.4799E-09	1.4800E-09	-0.01
BONE SURFACE	9.0308E-09	9.0310E-09	0.00
STOMACH	4.9185E-10	4.9180E-10	0.01
S.I.	9.6910E-10	9.6900E-10	0.01
U.L.I.	2.5204E-09	2.5200E-09	0.02
L.L.I.	6.1756E-09	6.1750E-09	0.01
SKIN	2.1218E-10	2.1210E-10	0.04
SPLEEN	3.0342E-10	3.0330E-10	0.04
THYMUS	2.5146E-10	2.5140E-10	0.02
UTERUS	4.9104E-10	4.9090E-10	0.03
ET	2.5751E-10	2.5740E-10	0.04
LUNG	2.8517E-10	2.8540E-10	-0.08

COLON	4.1010E-09	4.0990E-09	0.05
ET1	2.5751E-10	2.5740E-10	0.04
ET2	2.5751E-10	2.5740E-10	0.04
LN(ET)	2.5751E-10	2.5740E-10	0.04
BBsec	2.8517E-10	2.8510E-10	0.02
BBbas	2.8517E-10	2.8510E-10	0.02
bb	2.8517E-10	2.8510E-10	0.02
AI	2.8517E-10	2.8510E-10	0.02
LN(TH)	2.8517E-10	2.8510E-10	0.02
ESOPHAGUS	2.5146E-10	2.5140E-10	0.02
REMAINDER	**3.2173E-10**	**3.2170E-10**	**0.01**
C.E.D.	**1.1267E-09**	**1.1260E-09**	**0.06**
Maximum			**-0.08**

C.10.81. ^{46}Sc – Scandium-46

Maximum difference in ***Effective Dose***: **-0.23%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.29%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.07%**.

C.10.81.1. Acute Inhalation (Type S: f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.37E-09	1.37E-09	-0.05
URIN BLADDER	3.16E-10	3.17E-10	0.00
BRAIN	1.74E-10	1.74E-10	0.02
BREAST	1.44E-09	1.45E-09	-0.05
GALL BLADDER	7.37E-10	N/A	N/A
HEART	2.39E-09	N/A	N/A
KIDNEYS	6.16E-10	6.16E-10	-0.02
LIVER	1.28E-09	1.28E-09	0.00
MUSCLE	7.17E-10	7.17E-10	-0.01
OVARIES	9.92E-10	9.92E-10	0.00
PANCREAS	1.07E-09	1.07E-09	0.02
TESTES	1.08E-10	1.08E-10	0.04
THYROID	6.15E-10	6.15E-10	-0.02
R.B.M.	9.22E-10	9.22E-10	-0.02
BONE SURFACE	6.61E-10	6.62E-10	-0.02
STOMACH	1.01E-09	1.01E-09	-0.04
S.I.	1.07E-09	1.07E-09	-0.05
U.L.I.	2.23E-09	2.23E-09	0.01
L.L.I.	4.61E-09	4.61E-09	-0.01
SKIN	3.71E-10	3.71E-10	-0.02
SPLEEN	1.21E-09	1.21E-09	0.02
THYMUS	1.70E-09	1.70E-09	0.01
UTERUS	4.66E-10	4.66E-10	0.00
ET	2.34E-08	2.34E-08	-0.02
LUNG	3.02E-08	3.03E-08	-0.29
COLON	3.26E-09	3.26E-09	0.02
ET1	1.48E-06	1.48E-06	-0.01
ET2	2.19E-08	2.19E-08	-0.02
LN(ET)	1.70E-08	1.70E-08	0.02
BBsec	6.69E-08	6.70E-08	-0.20
BBbas	5.07E-08	5.08E-08	-0.20
bb	1.90E-08	1.90E-08	0.11
AI	1.30E-08	1.30E-08	-0.01
LN(TH)	7.21E-09	7.22E-09	-0.02
ESOPHAGUS	1.70E-09	1.70E-09	0.01
REMAINDER	**7.14E-10**	**7.13E-10**	**0.07**
C.E.D.	**4.76E-09**	**4.78E-09**	**-0.23**
Maximum			**-0.29**

C.10.81.2. Acute Ingestion (f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.30E-10	1.30E-10	-0.02
URIN BLADDER	6.33E-10	6.33E-10	0.00
BRAIN	1.99E-12	1.99E-12	0.02
BREAST	3.02E-11	3.02E-11	-0.01
GALL BLADDER	5.74E-10	N/A	N/A
HEART	6.18E-11	N/A	N/A
KIDNEYS	2.80E-10	2.80E-10	0.00
LIVER	2.02E-10	2.02E-10	-0.01
MUSCLE	2.43E-10	2.43E-10	-0.02
OVARIES	2.07E-09	2.07E-09	0.02
PANCREAS	2.53E-10	2.53E-10	0.00
TESTES	2.03E-10	2.03E-10	0.00
THYROID	6.59E-12	6.59E-12	0.00
R.B.M.	3.81E-10	3.81E-10	0.01
BONE SURFACE	1.67E-10	1.67E-10	-0.01
STOMACH	6.92E-10	6.92E-10	0.00
S.I.	2.07E-09	2.07E-09	0.00
U.L.I.	4.68E-09	4.68E-09	0.00
L.L.I.	1.04E-08	1.04E-08	0.00
SKIN	9.45E-11	9.45E-11	0.00
SPLEEN	2.15E-10	2.15E-10	0.01
THYMUS	2.28E-11	2.28E-11	-0.02
UTERUS	9.04E-10	9.04E-10	0.00
ET	6.59E-12	6.59E-12	0.00
LUNG	4.29E-11	4.30E-11	-0.10
COLON	7.13E-09	7.13E-09	0.03
ET1	6.59E-12	6.59E-12	0.00
ET2	6.59E-12	6.59E-12	0.00
LN(ET)	6.59E-12	6.59E-12	0.00
BBsec	4.29E-11	4.29E-11	0.00
BBbas	4.29E-11	4.29E-11	0.00
bb	4.29E-11	4.29E-11	0.00
AI	4.29E-11	4.29E-11	0.00
LN(TH)	4.29E-11	4.29E-11	0.00
ESOPHAGUS	2.28E-11	2.28E-11	-0.02
REMAINDER	**2.72E-10**	**2.72E-10**	**-0.04**
C.E.D.	**1.47E-09**	**1.47E-09**	**0.01**
Maximum			**-0.10**

C.10.82. ^{151}Sm – Samarium-151

Maximum difference in ***Effective Dose***: +**0.03%** (Ingestion).
Maximum difference in ***Organ Dose***: -**0.08%** (Ingestion – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.05%**.

C.10.82.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.19E-13	3.19E-13	-0.02
URIN BLADDER	2.72E-12	2.72E-12	-0.02
BRAIN	1.35E-13	1.35E-13	-0.01
BREAST	1.11E-13	1.11E-13	0.03
GALL BLADDER	6.87E-13	N/A	N/A
HEART	1.64E-13	N/A	N/A
KIDNEYS	1.72E-13	1.72E-13	0.00
LIVER	1.89E-08	1.89E-08	-0.03
MUSCLE	1.57E-13	1.57E-13	0.01
OVARIES	1.12E-13	1.12E-13	-0.02
PANCREAS	1.84E-13	1.84E-13	0.02
TESTES	8.86E-14	8.86E-14	0.01
THYROID	9.66E-14	9.66E-14	0.00
R.B.M.	5.65E-09	5.65E-09	-0.01
BONE SURFACE	7.06E-08	7.06E-08	-0.02
STOMACH	9.69E-12	9.69E-12	0.00
S.I.	2.41E-11	2.41E-11	0.01
U.L.I.	1.55E-10	1.55E-10	0.02
L.L.I.	4.53E-10	4.53E-10	-0.01
SKIN	1.14E-13	1.14E-13	-0.04
SPLEEN	1.02E-13	1.02E-13	-0.02
THYMUS	1.07E-13	1.07E-13	0.01
UTERUS	9.20E-14	9.20E-14	0.01
ET	1.12E-09	1.12E-09	0.01
LUNG	1.71E-09	1.71E-09	-0.04
COLON	2.84E-10	2.84E-10	0.04
ET1	4.85E-09	4.85E-09	0.01
ET2	1.12E-09	1.12E-09	-0.05
LN(ET)	1.09E-10	1.09E-10	-0.02
BBsec	2.57E-09	2.57E-09	-0.21
BBbas	2.80E-10	2.81E-10	-0.23
bb	2.13E-09	2.13E-09	0.25
AI	1.57E-09	1.57E-09	-0.01
LN(TH)	2.54E-10	2.54E-10	-0.03
ESOPHAGUS	1.07E-13	1.07E-13	0.01
REMAINDER	**1.20E-12**	**1.20E-12**	**-0.10**
C.E.D.	**2.57E-09**	**2.57E-09**	**-0.01**
Maximum			**0.25**

C.10.82.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.58E-15	2.58E-15	-0.01
URIN BLADDER	2.31E-14	2.31E-14	0.00
BRAIN	1.10E-15	1.10E-15	0.04
BREAST	8.71E-16	8.71E-16	0.02
GALL BLADDER	7.24E-15	N/A	N/A
HEART	1.25E-15	N/A	N/A
KIDNEYS	1.50E-15	1.50E-15	0.04
LIVER	1.53E-10	1.54E-10	-0.02
MUSCLE	1.88E-15	1.88E-15	0.00
OVARIES	1.63E-14	1.63E-14	0.02
PANCREAS	1.75E-15	1.75E-15	0.02
TESTES	8.01E-16	8.01E-16	0.02
THYROID	7.84E-16	7.84E-16	0.02
R.B.M.	4.60E-11	4.60E-11	0.00
BONE SURFACE	5.74E-10	5.74E-10	0.00
STOMACH	2.28E-11	2.28E-11	0.01
S.I.	5.70E-11	5.70E-11	0.00
U.L.I.	3.45E-10	3.45E-10	0.01
L.L.I.	1.01E-09	1.01E-09	-0.02
SKIN	9.88E-16	9.88E-16	0.01
SPLEEN	8.97E-16	8.96E-16	0.02
THYMUS	8.55E-16	8.55E-16	0.01
UTERUS	1.81E-15	1.81E-15	-0.01
ET	7.84E-16	7.84E-16	0.02
LUNG	1.97E-15	1.97E-15	-0.08
COLON	6.34E-10	6.34E-10	0.05
ET1	7.84E-16	7.84E-16	0.02
ET2	7.84E-16	7.84E-16	0.02
LN(ET)	7.84E-16	7.84E-16	0.02
BBsec	1.97E-15	1.97E-15	0.02
BBbas	1.97E-15	1.97E-15	0.02
bb	1.97E-15	1.97E-15	0.02
AI	1.97E-15	1.97E-15	0.02
LN(TH)	1.97E-15	1.97E-15	0.02
ESOPHAGUS	8.55E-16	8.55E-16	0.01
REMAINDER	**1.19E-12**	**1.19E-12**	**-0.05**
C.E.D.	**9.78E-11**	**9.78E-11**	**0.03**
Maximum			**-0.08**

C.10.83. ^{113}Sn – Tin-113

Maximum difference in ***Effective Dose***: **-0.23%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.26%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.08%**.

C.10.83.1. Acute Inhalation (Type F: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.3458E-10	4.3440E-10	0.04
URIN BLADDER	3.8743E-10	3.8730E-10	0.03
BRAIN	3.8323E-10	3.8310E-10	0.03

BREAST	2.4228E-10	2.4210E-10	0.07
GALL BLADDER	3.2566E-10	N/A	N/A
HEART	3.0548E-10	N/A	N/A
KIDNEYS	3.5101E-10	3.5090E-10	0.03
LIVER	3.0707E-10	3.0690E-10	0.06
MUSCLE	3.3592E-10	3.3580E-10	0.04
OVARIES	4.5921E-10	4.5910E-10	0.02
PANCREAS	3.5476E-10	3.5460E-10	0.05
TESTES	2.6801E-10	2.6790E-10	0.04
THYROID	3.3271E-10	3.3260E-10	0.03
R.B.M.	1.4083E-09	1.4080E-09	0.02
BONE SURFACE	3.2754E-09	3.2750E-09	0.01
STOMACH	3.0571E-10	3.0560E-10	0.04
S.I.	4.7940E-10	4.7920E-10	0.04
U.L.I.	1.1695E-09	1.1690E-09	0.04
L.L.I.	2.7961E-09	2.7960E-09	0.00
SKIN	2.6034E-10	2.6020E-10	0.05
SPLEEN	3.0724E-10	3.0710E-10	0.05
THYMUS	2.9769E-10	2.9750E-10	0.06
UTERUS	3.6173E-10	3.6160E-10	0.04
ET	4.1246E-09	4.1240E-09	0.01
LUNG	3.2758E-10	3.2780E-10	-0.07
COLON	1.8729E-09	1.8720E-09	0.05
ET1	6.6027E-07	6.6020E-07	0.01
ET2	3.4678E-09	3.4670E-09	0.02
LN(ET)	3.4609E-09	3.4600E-09	0.03
BBsec	3.2910E-10	3.2900E-10	0.03
BBbas	3.2885E-10	3.2870E-10	0.05
bb	3.2695E-10	3.2680E-10	0.05
AI	3.2682E-10	3.2670E-10	0.04
LN(TH)	3.2669E-10	3.2650E-10	0.06
ESOPHAGUS	2.9769E-10	2.9750E-10	0.06
REMAINDER	**2.2329E-09**	**2.2330E-09**	**0.00**
C.E.D.	**7.8694E-10**	**7.8680E-10**	**0.02**
Maximum			**0.07**

C.10.83.2. Acute Inhalation (Type M: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.3387E-10	2.3390E-10	-0.01
URIN BLADDER	1.1192E-10	1.1190E-10	0.02
BRAIN	8.6776E-11	8.6750E-11	0.03
BREAST	1.9947E-10	1.9950E-10	-0.02
GALL BLADDER	1.3978E-10	N/A	N/A
HEART	3.3496E-10	N/A	N/A
KIDNEYS	1.2189E-10	1.2190E-10	-0.01
LIVER	1.9333E-10	1.9330E-10	0.02
MUSCLE	1.4758E-10	1.4760E-10	-0.01
OVARIES	2.2055E-10	2.2050E-10	0.02
PANCREAS	1.8087E-10	1.8090E-10	-0.02
TESTES	6.2596E-11	6.2570E-11	0.04
THYROID	1.2342E-10	1.2340E-10	0.02
R.B.M.	3.6581E-10	3.6580E-10	0.00
BONE SURFACE	7.0825E-10	7.0830E-10	-0.01
STOMACH	1.8247E-10	1.8240E-10	0.04
S.I.	3.2757E-10	3.2750E-10	0.02
U.L.I.	1.2868E-09	1.2870E-09	-0.02
L.L.I.	3.4992E-09	3.4990E-09	0.01
SKIN	8.4446E-11	8.4420E-11	0.03
SPLEEN	1.6863E-10	1.6860E-10	0.02
THYMUS	2.3606E-10	2.3610E-10	-0.02
UTERUS	1.2211E-10	1.2210E-10	0.01
ET	5.6262E-09	5.6260E-09	0.00
LUNG	1.2497E-08	1.2530E-08	-0.26
COLON	2.2435E-09	2.2430E-09	0.02
ET1	6.6023E-07	6.6010E-07	0.02
ET2	4.9724E-09	4.9720E-09	0.01
LN(ET)	3.5986E-09	3.5980E-09	0.02
BBsec	2.3887E-08	2.3930E-08	-0.18
BBbas	2.1498E-08	2.1540E-08	-0.19
bb	7.9111E-09	7.9080E-09	0.04
AI	6.9203E-09	6.9210E-09	-0.01
LN(TH)	1.6804E-09	1.6810E-09	-0.04
ESOPHAGUS	2.3606E-10	2.3610E-10	-0.02
REMAINDER	**1.5123E-10**	**1.5120E-10**	**0.02**
C.E.D.	**1.9375E-09**	**1.9420E-09**	**-0.23**
Maximum			**-0.26**

C.10.83.3. Acute Ingestion (f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.4669E-11	4.4660E-11	0.02
URIN BLADDER	1.2092E-10	1.2090E-10	0.02
BRAIN	2.6408E-11	2.6400E-11	0.03
BREAST	1.9335E-11	1.9320E-11	0.08
GALL BLADDER	1.0723E-10	N/A	N/A
HEART	2.6689E-11	N/A	N/A
KIDNEYS	5.9787E-11	5.9770E-11	0.03
LIVER	4.4324E-11	4.4310E-11	0.03
MUSCLE	5.6577E-11	5.6560E-11	0.03
OVARIES	3.6506E-10	3.6500E-10	0.02
PANCREAS	5.2125E-11	5.2110E-11	0.03
TESTES	4.7313E-11	4.7300E-11	0.03
THYROID	2.3202E-11	2.3190E-11	0.05
R.B.M.	1.5219E-10	1.5220E-10	-0.01
BONE SURFACE	2.5767E-10	2.5770E-10	-0.01
STOMACH	1.4077E-10	1.4070E-10	0.05
S.I.	6.0704E-10	6.0700E-10	0.01
U.L.I.	2.8208E-09	2.8210E-09	-0.01
L.L.I.	7.9685E-09	7.9680E-09	0.01
SKIN	2.8798E-11	2.8790E-11	0.03
SPLEEN	4.3753E-11	4.3740E-11	0.03
THYMUS	2.2198E-11	2.2190E-11	0.04
UTERUS	1.5241E-10	1.5240E-10	0.01
ET	2.3202E-11	2.3190E-11	0.05
LUNG	2.6491E-11	2.6500E-11	-0.03
COLON	5.0468E-09	5.0450E-09	0.04
ET1	2.3202E-11	2.3190E-11	0.05
ET2	2.3202E-11	2.3190E-11	0.05
LN(ET)	2.3202E-11	2.3190E-11	0.05
BBsec	2.6491E-11	2.6480E-11	0.04
BBbas	2.6491E-11	2.6480E-11	0.04
bb	2.6491E-11	2.6480E-11	0.04
AI	2.6491E-11	2.6480E-11	0.04
LN(TH)	2.6491E-11	2.6480E-11	0.04
ESOPHAGUS	2.2198E-11	2.2190E-11	0.04
REMAINDER	**6.6805E-11**	**6.6820E-11**	**-0.02**
C.E.D.	**7.3467E-10**	**7.3440E-10**	**0.04**
Maximum			**0.08**

C.10.84. ^{85}Sr – Strontium-85

Maximum difference in ***Effective Dose***: **-0.05%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.12%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **±0.03%**.

C.10.84.1. Acute Inhalation (Type F: f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.7999E-10	4.8000E-10	0.00
URIN BLADDER	2.9664E-10	2.9670E-10	-0.02
BRAIN	2.9498E-10	2.9500E-10	-0.01
BREAST	1.6667E-10	1.6670E-10	-0.02
GALL BLADDER	2.8807E-10	N/A	N/A
HEART	2.5851E-10	N/A	N/A
KIDNEYS	3.5135E-10	3.5140E-10	-0.01
LIVER	2.4379E-10	2.4380E-10	0.00
MUSCLE	2.7220E-10	2.7220E-10	0.00
OVARIES	4.8401E-10	4.8400E-10	0.00
PANCREAS	3.3633E-10	3.3640E-10	-0.02
TESTES	1.6810E-10	1.6810E-10	0.00
THYROID	2.5787E-10	2.5790E-10	-0.01
R.B.M.	9.4467E-10	9.4480E-10	-0.01
BONE SURFACE	9.2552E-10	9.2560E-10	-0.01
STOMACH	2.4080E-10	2.4080E-10	0.00
S.I.	4.2869E-10	4.2870E-10	0.00
U.L.I.	4.6980E-10	4.6980E-10	0.00
L.L.I.	7.4160E-10	7.4160E-10	0.00
SKIN	1.7296E-10	1.7300E-10	-0.02
SPLEEN	2.4760E-10	2.4760E-10	0.00
THYMUS	2.3695E-10	2.3700E-10	-0.02
UTERUS	3.4650E-10	3.4650E-10	0.00
ET	5.3774E-09	5.3770E-09	0.01
LUNG	2.7771E-10	2.7800E-10	-0.10
COLON	5.8733E-10	5.8720E-10	0.02
ET1	1.8600E-08	1.8600E-08	0.00
ET2	5.3642E-09	5.3640E-09	0.00
LN(ET)	5.3618E-09	5.3610E-09	0.01
BBsec	2.7801E-10	2.7800E-10	0.00
BBbas	2.7796E-10	2.7800E-10	-0.01
bb	2.7757E-10	2.7760E-10	-0.01
AI	2.7758E-10	2.7760E-10	-0.01
LN(TH)	2.7752E-10	2.7750E-10	0.01
ESOPHAGUS	2.3695E-10	2.3700E-10	-0.02
REMAINDER	**2.8275E-09**	**2.8270E-09**	**0.02**
C.E.D.	**5.5532E-10**	**5.5540E-10**	**-0.01**
Maximum			**-0.10**

C.10.84.2. Acute Inhalation (Type S: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.1636E-10	3.1640E-10	-0.01
URIN BLADDER	8.5132E-11	8.5140E-11	-0.01
BRAIN	3.8869E-11	3.8870E-11	0.00
BREAST	3.1517E-10	3.1520E-10	-0.01
GALL BLADDER	1.7284E-10	N/A	N/A
HEART	5.4286E-10	N/A	N/A
KIDNEYS	1.2883E-10	1.2880E-10	0.02
LIVER	2.6769E-10	2.6770E-10	0.00
MUSCLE	1.6750E-10	1.6750E-10	0.00
OVARIES	2.6459E-10	2.6460E-10	0.00
PANCREAS	2.4986E-10	2.4990E-10	-0.02
TESTES	2.9149E-11	2.9150E-11	0.00
THYROID	1.3806E-10	1.3810E-10	-0.03
R.B.M.	2.2527E-10	2.2530E-10	-0.01
BONE SURFACE	1.6151E-10	1.6150E-10	0.01
STOMACH	2.1989E-10	2.1990E-10	0.00
S.I.	2.5310E-10	2.5310E-10	0.00
U.L.I.	4.3477E-10	4.3480E-10	-0.01
L.L.I.	8.1762E-10	8.1770E-10	-0.01
SKIN	7.8923E-11	7.8930E-11	-0.01
SPLEEN	2.2892E-10	2.2900E-10	-0.03
THYMUS	3.8059E-10	3.8060E-10	0.00
UTERUS	1.2358E-10	1.2360E-10	-0.02
ET	5.6080E-09	5.6070E-09	0.02
LUNG	2.1324E-09	2.1350E-09	-0.12
COLON	6.0033E-10	6.0020E-10	0.02
ET1	1.8796E-08	1.8790E-08	0.03
ET2	5.5949E-09	5.5940E-09	0.02
LN(ET)	5.5707E-09	5.5700E-09	0.01
BBsec	2.2683E-09	2.2700E-09	-0.07
BBbas	2.2246E-09	2.2260E-09	-0.06
bb	1.9603E-09	1.9600E-09	0.02
AI	2.1914E-09	2.1920E-09	-0.03
LN(TH)	1.8131E-09	1.8130E-09	0.01
ESOPHAGUS	3.8059E-10	3.8060E-10	0.00
REMAINDER	**2.8859E-09**	**2.8860E-09**	**0.00**
C.E.D.	**6.4030E-10**	**6.4060E-10**	**-0.05**
Maximum			**-0.12**

C.10.84.3. Acute Ingestion (f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.4026E-10	4.4030E-10	-0.01
URIN BLADDER	3.6214E-10	3.6210E-10	0.01
BRAIN	2.4474E-10	2.4470E-10	0.02
BREAST	1.4649E-10	1.4650E-10	-0.01
GALL BLADDER	3.4724E-10	N/A	N/A
HEART	2.3100E-10	N/A	N/A
KIDNEYS	3.5200E-10	3.5200E-10	0.00
LIVER	2.4136E-10	2.4140E-10	-0.02
MUSCLE	2.6522E-10	2.6520E-10	0.01
OVARIES	7.5210E-10	7.5210E-10	0.00
PANCREAS	3.3579E-10	3.3580E-10	0.00
TESTES	1.8090E-10	1.8090E-10	0.00
THYROID	2.1261E-10	2.1260E-10	0.00
R.B.M.	8.8320E-10	8.8320E-10	0.00
BONE SURFACE	8.2895E-10	8.2900E-10	-0.01
STOMACH	3.2216E-10	3.2210E-10	0.02
S.I.	6.7420E-10	6.7420E-10	0.00
U.L.I.	9.4612E-10	9.4610E-10	0.00
L.L.I.	1.7203E-09	1.7200E-09	0.02
SKIN	1.6015E-10	1.6010E-10	0.03
SPLEEN	2.4851E-10	2.4850E-10	0.00
THYMUS	1.9638E-10	1.9640E-10	-0.01
UTERUS	4.4899E-10	4.4900E-10	0.00
ET	2.1261E-10	2.1260E-10	0.00
LUNG	2.4073E-10	2.4100E-10	-0.11

COLON	1.2809E-09	1.2810E-09	-0.01
ET1	2.1261E-10	2.1260E-10	0.00
ET2	2.1261E-10	2.1260E-10	0.00
LN(ET)	2.1261E-10	2.1260E-10	0.00
BBsec	2.4073E-10	2.4070E-10	0.01
BBbas	2.4073E-10	2.4070E-10	0.01
bb	2.4073E-10	2.4070E-10	0.01
AI	2.4073E-10	2.4070E-10	0.01
LN(TH)	2.4073E-10	2.4070E-10	0.01
ESOPHAGUS	1.9638E-10	1.9640E-10	-0.01
REMAINDER	**2.7429E-10**	**2.7430E-10**	**0.00**
C.E.D.	**5.5921E-10**	**5.5920E-10**	**0.00**
Maximum			**-0.11**

C.10.84.4. Acute Ingestion (f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.6335E-11	4.6340E-11	-0.01
URIN BLADDER	1.8207E-10	1.8210E-10	-0.02
BRAIN	8.2752E-12	8.2750E-12	0.00
BREAST	1.0930E-11	1.0930E-11	0.00
GALL BLADDER	1.6879E-10	N/A	N/A
HEART	2.1011E-11	N/A	N/A
KIDNEYS	8.4312E-11	8.4310E-11	0.00
LIVER	5.5016E-11	5.5020E-11	-0.01
MUSCLE	7.1269E-11	7.1270E-11	0.00
OVARIES	5.7228E-10	5.7230E-10	0.00
PANCREAS	7.4514E-11	7.4510E-11	0.01
TESTES	6.1671E-11	6.1670E-11	0.00
THYROID	8.0129E-12	8.0130E-12	0.00
R.B.M.	1.3179E-10	1.3180E-10	-0.01
BONE SURFACE	7.0548E-11	7.0550E-11	0.00
STOMACH	1.7020E-10	1.7020E-10	0.00
S.I.	5.2001E-10	5.2000E-10	0.00
U.L.I.	9.2376E-10	9.2380E-10	0.00
L.L.I.	1.8467E-09	1.8470E-09	-0.02
SKIN	2.7155E-11	2.7150E-11	0.02
SPLEEN	5.8291E-11	5.8290E-11	0.00
THYMUS	1.1047E-11	1.1050E-11	-0.03
UTERUS	2.5697E-10	2.5700E-10	-0.01
ET	8.0129E-12	8.0130E-12	0.00
LUNG	1.7315E-11	1.7330E-11	-0.09
COLON	1.3229E-09	1.3220E-09	0.07
ET1	8.0129E-12	8.0130E-12	0.00
ET2	8.0129E-12	8.0130E-12	0.00
LN(ET)	8.0129E-12	8.0130E-12	0.00
BBsec	1.7315E-11	1.7320E-11	-0.03
BBbas	1.7315E-11	1.7320E-11	-0.03
bb	1.7315E-11	1.7320E-11	-0.03
AI	1.7315E-11	1.7320E-11	-0.03
LN(TH)	1.7315E-11	1.7320E-11	-0.03
ESOPHAGUS	1.1047E-11	1.1050E-11	-0.03
REMAINDER	**7.8206E-11**	**7.8250E-11**	**-0.06**
C.E.D.	**3.2976E-10**	**3.2970E-10**	**0.02**
Maximum			**-0.09**

C.10.85. ^{89}Sr – Strontium-89

Maximum difference in ***Effective Dose***: **-0.20%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.24%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.16%**.

C.10.85.1. Acute Inhalation (Type F: f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.2266E-10	2.2230E-10	0.16
URIN BLADDER	7.6279E-10	7.6250E-10	0.04
BRAIN	2.2263E-10	2.2230E-10	0.15
BREAST	2.2262E-10	2.2230E-10	0.14
GALL BLADDER	2.2263E-10	N/A	N/A
HEART	2.2263E-10	N/A	N/A
KIDNEYS	2.2264E-10	2.2230E-10	0.15
LIVER	2.2263E-10	2.2230E-10	0.15
MUSCLE	2.2263E-10	2.2230E-10	0.15
OVARIES	2.2266E-10	2.2230E-10	0.16
PANCREAS	2.2264E-10	2.2230E-10	0.15
TESTES	2.2262E-10	2.2230E-10	0.14
THYROID	2.2263E-10	2.2230E-10	0.15
R.B.M.	5.4362E-09	5.4350E-09	0.02
BONE SURFACE	6.7739E-09	6.7720E-09	0.03
STOMACH	3.5693E-10	3.5660E-10	0.09
S.I.	4.5729E-10	4.5700E-10	0.06
U.L.I.	2.2234E-09	2.2230E-09	0.02
L.L.I.	6.0132E-09	6.0130E-09	0.00
SKIN	2.2262E-10	2.2230E-10	0.14
SPLEEN	2.2263E-10	2.2230E-10	0.15
THYMUS	2.2263E-10	2.2230E-10	0.15
UTERUS	2.2264E-10	2.2230E-10	0.15
ET	2.3924E-09	2.3920E-09	0.02
LUNG	2.4854E-10	2.4850E-10	0.02
COLON	3.8622E-09	3.8600E-09	0.06
ET1	1.8286E-06	1.8280E-06	0.03
ET2	5.6474E-10	5.6440E-10	0.06
LN(ET)	2.2327E-10	2.2290E-10	0.17
BBsec	2.9135E-10	2.9120E-10	0.05
BBbas	2.8394E-10	2.8370E-10	0.08
bb	2.3150E-10	2.3120E-10	0.13
AI	2.2654E-10	2.2620E-10	0.15
LN(TH)	2.2263E-10	2.2230E-10	0.15
ESOPHAGUS	2.2263E-10	2.2230E-10	0.15
REMAINDER	**2.2857E-10**	**2.2830E-10**	**0.12**
C.E.D.	**1.3971E-09**	**1.3960E-09**	**0.08**
Maximum			**0.17**

C.10.85.2. Acute Inhalation (Type S: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.2724E-12	3.2680E-12	0.13
URIN BLADDER	1.1089E-11	1.1080E-11	0.08
BRAIN	3.2383E-12	3.2330E-12	0.16
BREAST	3.2739E-12	3.2690E-12	0.15
GALL BLADDER	3.2561E-12	N/A	N/A
HEART	3.3011E-12	N/A	N/A

KIDNEYS	3.2514E-12	3.2470E-12	0.14
LIVER	3.2678E-12	3.2630E-12	0.15
MUSCLE	3.2550E-12	3.2500E-12	0.15
OVARIES	3.2731E-12	3.2680E-12	0.16
PANCREAS	3.2641E-12	3.2590E-12	0.16
TESTES	3.2367E-12	3.2320E-12	0.15
THYROID	3.2508E-12	3.2460E-12	0.15
R.B.M.	7.8965E-11	7.8940E-11	0.03
BONE SURFACE	9.8381E-11	9.8350E-11	0.03
STOMACH	2.9567E-10	2.9570E-10	-0.01
S.I.	7.2531E-10	7.2540E-10	-0.01
U.L.I.	4.3496E-09	4.3500E-09	-0.01
L.L.I.	1.2583E-08	1.2580E-08	0.02
SKIN	3.2437E-12	3.2390E-12	0.15
SPLEEN	3.2634E-12	3.2590E-12	0.14
THYMUS	3.2821E-12	3.2770E-12	0.16
UTERUS	3.2512E-12	3.2460E-12	0.16
ET	6.1023E-09	6.1020E-09	0.00
LUNG	3.7999E-08	3.8090E-08	-0.24
COLON	7.9100E-09	7.9070E-09	0.04
ET1	1.8284E-06	1.8280E-06	0.02
ET2	4.2820E-09	4.2820E-09	0.00
LN(ET)	5.2811E-10	5.2790E-10	0.04
BBsec	6.8550E-08	6.8670E-08	-0.17
BBbas	6.2840E-08	6.2940E-08	-0.16
bb	2.6310E-08	2.6290E-08	0.08
AI	2.2099E-08	2.2100E-08	0.00
LN(TH)	1.7991E-09	1.7990E-09	0.01
ESOPHAGUS	3.2821E-12	3.2770E-12	0.16
REMAINDER	**2.1252E-11**	**2.1260E-11**	**-0.04**
C.E.D.	**5.5580E-09**	**5.5690E-09**	**-0.20**
Maximum			**-0.24**

C.10.85.3. Acute Ingestion (f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.9550E-10	1.9520E-10	0.15
URIN BLADDER	6.6980E-10	6.6950E-10	0.04
BRAIN	1.9548E-10	1.9520E-10	0.14
BREAST	1.9547E-10	1.9520E-10	0.14
GALL BLADDER	1.9549E-10	N/A	N/A
HEART	1.9548E-10	N/A	N/A
KIDNEYS	1.9549E-10	1.9520E-10	0.15
LIVER	1.9548E-10	1.9520E-10	0.14
MUSCLE	1.9548E-10	1.9520E-10	0.14
OVARIES	1.9555E-10	1.9530E-10	0.13
PANCREAS	1.9549E-10	1.9520E-10	0.15
TESTES	1.9547E-10	1.9520E-10	0.14
THYROID	1.9547E-10	1.9520E-10	0.14
R.B.M.	4.7732E-09	4.7720E-09	0.03
BONE SURFACE	5.9477E-09	5.9460E-09	0.03
STOMACH	8.6707E-10	8.6680E-10	0.03
S.I.	1.3689E-09	1.3690E-09	-0.01
U.L.I.	7.7638E-09	7.7640E-09	0.00
L.L.I.	2.2100E-08	2.2100E-08	0.00
SKIN	1.9547E-10	1.9520E-10	0.14
SPLEEN	1.9548E-10	1.9520E-10	0.14
THYMUS	1.9547E-10	1.9520E-10	0.14
UTERUS	1.9551E-10	1.9520E-10	0.16
ET	1.9547E-10	1.9520E-10	0.14
LUNG	1.9548E-10	1.9540E-10	0.04
COLON	1.3963E-08	1.3960E-08	0.02
ET1	1.9547E-10	1.9520E-10	0.14
ET2	1.9547E-10	1.9520E-10	0.14
LN(ET)	1.9547E-10	1.9520E-10	0.14
BBsec	1.9548E-10	1.9520E-10	0.14
BBbas	1.9548E-10	1.9520E-10	0.14
bb	1.9548E-10	1.9520E-10	0.14
AI	1.9548E-10	1.9520E-10	0.14
LN(TH)	1.9548E-10	1.9520E-10	0.14
ESOPHAGUS	1.9547E-10	1.9520E-10	0.14
REMAINDER	**2.1990E-10**	**2.1960E-10**	**0.14**
C.E.D.	**2.5600E-09**	**2.5590E-09**	**0.04**
Maximum			**0.16**

C.10.85.4. Acute Ingestion (f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.5178E-12	6.5080E-12	0.15
URIN BLADDER	2.2337E-11	2.2330E-11	0.03
BRAIN	6.5118E-12	6.5020E-12	0.15
BREAST	6.5126E-12	6.5030E-12	0.15
GALL BLADDER	6.5357E-12	N/A	N/A
HEART	6.5142E-12	N/A	N/A
KIDNEYS	6.5237E-12	6.5140E-12	0.15
LIVER	6.5197E-12	6.5100E-12	0.15
MUSCLE	6.5219E-12	6.5120E-12	0.15
OVARIES	6.5998E-12	6.5900E-12	0.15
PANCREAS	6.5225E-12	6.5130E-12	0.15
TESTES	6.5199E-12	6.5100E-12	0.15
THYROID	6.5119E-12	6.5020E-12	0.15
R.B.M.	1.5902E-10	1.5900E-10	0.01
BONE SURFACE	1.9813E-10	1.9810E-10	0.02
STOMACH	6.7812E-10	6.7810E-10	0.00
S.I.	1.6650E-09	1.6650E-09	0.00
U.L.I.	9.9871E-09	9.9870E-09	0.00
L.L.I.	2.8893E-08	2.8890E-08	0.01
SKIN	6.5153E-12	6.5050E-12	0.16
SPLEEN	6.5198E-12	6.5100E-12	0.15
THYMUS	6.5125E-12	6.5030E-12	0.15
UTERUS	6.5502E-12	6.5400E-12	0.16
ET	6.5119E-12	6.5020E-12	0.15
LUNG	6.5134E-12	6.5100E-12	0.05
COLON	1.8162E-08	1.8150E-08	0.07
ET1	6.5119E-12	6.5020E-12	0.15
ET2	6.5119E-12	6.5020E-12	0.15
LN(ET)	6.5119E-12	6.5020E-12	0.15
BBsec	6.5134E-12	6.5030E-12	0.16
BBbas	6.5134E-12	6.5030E-12	0.16
bb	6.5134E-12	6.5030E-12	0.16
AI	6.5134E-12	6.5030E-12	0.16
LN(TH)	6.5134E-12	6.5030E-12	0.16
ESOPHAGUS	6.5125E-12	6.5030E-12	0.15
REMAINDER	**4.1029E-11**	**4.1040E-11**	**-0.03**
C.E.D.	**2.2885E-09**	**2.2880E-09**	**0.02**
Maximum			**0.16**

C.10.86. ^{90}Sr – Strontium-90

Maximum difference in ***Effective Dose***: **-0.10%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **+0.16%** (Inhalation – type "S" – Soft Tissues).
Maximum difference excluding ***Respiratory Tract***: **+0.16%**.

C.10.86.1. Acute Inhalation (Type F: f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.4963E-10	7.4860E-10	0.14
URIN BLADDER	1.6609E-09	1.6600E-09	0.05
BRAIN	7.4963E-10	7.4860E-10	0.14
BREAST	7.4962E-10	7.4860E-10	0.14
GALL BLADDER	7.4962E-10	N/A	N/A
HEART	7.4962E-10	N/A	N/A
KIDNEYS	7.4962E-10	7.4850E-10	0.15
LIVER	7.4962E-10	7.4850E-10	0.15
MUSCLE	7.4963E-10	7.4860E-10	0.14
OVARIES	7.4962E-10	7.4850E-10	0.15
PANCREAS	7.4962E-10	7.4850E-10	0.15
TESTES	7.4962E-10	7.4850E-10	0.15
THYROID	7.4962E-10	7.4850E-10	0.15
R.B.M.	2.0297E-07	2.0300E-07	-0.01
BONE SURFACE	4.6349E-07	4.6350E-07	0.00
STOMACH	7.9729E-10	7.9620E-10	0.14
S.I.	8.4401E-10	8.4290E-10	0.13
U.L.I.	2.6535E-09	2.6530E-09	0.02
L.L.I.	7.7594E-09	7.7590E-09	0.01
SKIN	7.4963E-10	7.4860E-10	0.14
SPLEEN	7.4962E-10	7.4850E-10	0.15
THYMUS	7.4962E-10	7.4850E-10	0.15
UTERUS	7.4962E-10	7.4850E-10	0.15
ET	3.2391E-09	3.2380E-09	0.03
LUNG	7.7372E-10	7.7350E-10	0.03
COLON	4.8615E-09	4.8590E-09	0.05
ET1	2.1540E-06	2.1540E-06	0.00
ET2	1.0865E-09	1.0850E-09	0.14
LN(ET)	7.4967E-10	7.4860E-10	0.14
BBsec	8.1980E-10	8.1890E-10	0.11
BBbas	8.0622E-10	8.0530E-10	0.11
bb	7.5726E-10	7.5620E-10	0.14
AI	7.5096E-10	7.4990E-10	0.14
LN(TH)	7.4962E-10	7.4860E-10	0.14
ESOPHAGUS	7.4962E-10	7.4850E-10	0.15
REMAINDER	**7.5281E-10**	**7.5170E-10**	**0.15**
C.E.D.	**3.0191E-08**	**3.0190E-08**	**0.00**
Maximum			**0.15**

C.10.86.2. Acute Inhalation (Type S: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.3810E-11	2.3780E-11	0.13
URIN BLADDER	5.8546E-11	5.8520E-11	0.04
BRAIN	2.3808E-11	2.3770E-11	0.16
BREAST	2.3810E-11	2.3780E-11	0.13
GALL BLADDER	2.3808E-11	N/A	N/A
HEART	2.3816E-11	N/A	N/A
KIDNEYS	2.3808E-11	2.3770E-11	0.16
LIVER	2.3814E-11	2.3780E-11	0.14
MUSCLE	2.3815E-11	2.3780E-11	0.15
OVARIES	2.3808E-11	2.3770E-11	0.16
PANCREAS	2.3808E-11	2.3770E-11	0.16
TESTES	2.3808E-11	2.3770E-11	0.16
THYROID	2.3808E-11	2.3770E-11	0.16
R.B.M.	6.0266E-09	6.0270E-09	-0.01
BONE SURFACE	1.3578E-08	1.3580E-08	-0.01
STOMACH	1.9477E-10	1.9480E-10	-0.02
S.I.	4.9213E-10	4.9210E-10	0.01
U.L.I.	3.7027E-09	3.7030E-09	-0.01
L.L.I.	1.4195E-08	1.4200E-08	-0.04
SKIN	2.3808E-11	2.3770E-11	0.16
SPLEEN	2.3810E-11	2.3780E-11	0.13
THYMUS	2.3808E-11	2.3780E-11	0.12
UTERUS	2.3808E-11	2.3770E-11	0.16
ET	9.1039E-08	9.1060E-08	-0.02
LUNG	6.2668E-07	6.2740E-07	-0.11
COLON	8.2399E-09	8.2360E-09	0.05
ET1	2.1533E-06	2.1530E-06	0.01
ET2	8.8040E-08	8.8070E-08	-0.03
LN(ET)	1.0213E-06	1.0220E-06	-0.07
BBsec	5.5397E-07	5.5440E-07	-0.08
BBbas	5.3509E-07	5.3540E-07	-0.06
bb	6.4650E-07	6.4650E-07	0.00
AI	6.8594E-07	6.8610E-07	-0.02
LN(TH)	1.6467E-06	1.6470E-06	-0.02
ESOPHAGUS	2.3808E-11	2.3780E-11	0.12
REMAINDER	**7.7943E-11**	**7.7960E-11**	**-0.02**
C.E.D.	**7.7089E-08**	**7.7170E-08**	**-0.10**
Maximum			**0.16**

C.10.86.3. Acute Ingestion (f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.6188E-10	6.6090E-10	0.15
URIN BLADDER	1.4758E-09	1.4750E-09	0.05
BRAIN	6.6189E-10	6.6090E-10	0.15
BREAST	6.6188E-10	6.6090E-10	0.15
GALL BLADDER	6.6188E-10	N/A	N/A
HEART	6.6188E-10	N/A	N/A
KIDNEYS	6.6188E-10	6.6090E-10	0.15
LIVER	6.6188E-10	6.6090E-10	0.15
MUSCLE	6.6188E-10	6.6090E-10	0.15
OVARIES	6.6188E-10	6.6090E-10	0.15
PANCREAS	6.6188E-10	6.6090E-10	0.15
TESTES	6.6188E-10	6.6090E-10	0.15
THYROID	6.6188E-10	6.6090E-10	0.15
R.B.M.	1.7854E-07	1.7850E-07	0.02
BONE SURFACE	4.0766E-07	4.0770E-07	-0.01
STOMACH	8.9886E-10	8.9790E-10	0.11
S.I.	1.1315E-09	1.1300E-09	0.13
U.L.I.	5.8283E-09	5.8270E-09	0.02
L.L.I.	2.1841E-08	2.1840E-08	0.00
SKIN	6.6188E-10	6.6090E-10	0.15
SPLEEN	6.6188E-10	6.6090E-10	0.15
THYMUS	6.6188E-10	6.6090E-10	0.15

UTERUS	6.6188E-10	6.6090E-10	0.15
ET	6.6188E-10	6.6090E-10	0.15
LUNG	6.6188E-10	6.6150E-10	0.06
COLON	1.2753E-08	1.2740E-08	0.10
ET1	6.6188E-10	6.6090E-10	0.15
ET2	6.6188E-10	6.6090E-10	0.15
LN(ET)	6.6188E-10	6.6090E-10	0.15
BBsec	6.6188E-10	6.6090E-10	0.15
BBbas	6.6188E-10	6.6090E-10	0.15
bb	6.6188E-10	6.6090E-10	0.15
AI	6.6188E-10	6.6090E-10	0.15
LN(TH)	6.6188E-10	6.6090E-10	0.15
ESOPHAGUS	6.6188E-10	6.6090E-10	0.15
REMAINDER	**6.7165E-10**	**6.7070E-10**	**0.14**
C.E.D.	**2.7598E-08**	**2.7600E-08**	**-0.01**
Maximum			**0.15**

C.10.86.4. Acute Ingestion (f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.2094E-11	2.2060E-11	0.15
URIN BLADDER	4.9378E-11	4.9350E-11	0.06
BRAIN	2.2094E-11	2.2060E-11	0.15
BREAST	2.2094E-11	2.2060E-11	0.15
GALL BLADDER	2.2094E-11	N/A	N/A
HEART	2.2094E-11	N/A	N/A
KIDNEYS	2.2094E-11	2.2060E-11	0.15
LIVER	2.2094E-11	2.2060E-11	0.15
MUSCLE	2.2094E-11	2.2060E-11	0.15
OVARIES	2.2095E-11	2.2060E-11	0.16
PANCREAS	2.2094E-11	2.2060E-11	0.15
TESTES	2.2094E-11	2.2060E-11	0.15
THYROID	2.2094E-11	2.2060E-11	0.15
R.B.M.	5.9519E-09	5.9520E-09	0.00
BONE SURFACE	1.3589E-08	1.3590E-08	-0.01
STOMACH	2.5908E-10	2.5900E-10	0.03
S.I.	7.1709E-10	7.1710E-10	0.00
U.L.I.	6.1921E-09	6.1920E-09	0.00
L.L.I.	2.6227E-08	2.6230E-08	-0.01
SKIN	2.2094E-11	2.2060E-11	0.15
SPLEEN	2.2094E-11	2.2060E-11	0.15
THYMUS	2.2094E-11	2.2060E-11	0.15
UTERUS	2.2094E-11	2.2060E-11	0.15
ET	2.2094E-11	2.2060E-11	0.15
LUNG	2.2094E-11	2.2080E-11	0.06
COLON	1.4856E-08	1.4850E-08	0.04
ET1	2.2094E-11	2.2060E-11	0.15
ET2	2.2094E-11	2.2060E-11	0.15
LN(ET)	2.2094E-11	2.2060E-11	0.15
BBsec	2.2094E-11	2.2060E-11	0.15
BBbas	2.2094E-11	2.2060E-11	0.15
bb	2.2094E-11	2.2060E-11	0.15
AI	2.2094E-11	2.2060E-11	0.15
LN(TH)	2.2094E-11	2.2060E-11	0.15
ESOPHAGUS	2.2094E-11	2.2060E-11	0.15
REMAINDER	**3.6555E-11**	**3.6530E-11**	**0.07**
C.E.D.	**2.6799E-09**	**2.6790E-09**	**0.03**
Maximum			**0.16**

C.10.87. ^{91}Sr – Strontium-91

Maximum difference in ***Effective Dose***: **-0.09%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.34%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.07%**.

C.10.87.1. Acute Inhalation (Type F: f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.60E-11	3.60E-11	0.02
URIN BLADDER	1.95E-10	1.95E-10	-0.03
BRAIN	3.66E-11	3.66E-11	0.05
BREAST	2.74E-11	2.74E-11	0.05
GALL BLADDER	4.76E-11	N/A	N/A
HEART	3.27E-11	N/A	N/A
KIDNEYS	3.75E-11	3.75E-11	0.02
LIVER	3.41E-11	3.41E-11	0.04
MUSCLE	4.05E-11	4.05E-11	0.02
OVARIES	7.24E-11	7.24E-11	0.01
PANCREAS	3.98E-11	3.97E-11	0.03
TESTES	2.85E-11	2.85E-11	0.06
THYROID	3.78E-11	3.78E-11	0.03
R.B.M.	1.68E-10	1.68E-10	0.01
BONE SURFACE	1.72E-10	1.72E-10	0.00
STOMACH	1.93E-10	1.93E-10	-0.01
S.I.	2.84E-10	2.84E-10	-0.01
U.L.I.	8.51E-10	8.51E-10	-0.01
L.L.I.	9.07E-10	9.07E-10	-0.02
SKIN	2.89E-11	2.89E-11	0.03
SPLEEN	3.44E-11	3.44E-11	0.03
THYMUS	3.93E-11	3.92E-11	0.03
UTERUS	5.28E-11	5.28E-11	0.02
ET	3.85E-09	3.85E-09	0.01
LUNG	6.06E-11	6.08E-11	-0.20
COLON	8.75E-10	8.75E-10	-0.01
ET1	6.94E-07	6.94E-07	0.00
ET2	3.16E-09	3.16E-09	0.00
LN(ET)	2.82E-09	2.82E-09	0.01
BBsec	1.03E-10	1.03E-10	-0.08
BBbas	9.53E-11	9.54E-11	-0.11
bb	4.40E-11	4.40E-11	0.07
AI	3.89E-11	3.89E-11	0.03
LN(TH)	3.46E-11	3.46E-11	0.05
ESOPHAGUS	3.93E-11	3.92E-11	0.03
REMAINDER	**1.95E-09**	**1.95E-09**	**-0.01**
C.E.D.	**2.86E-10**	**2.86E-10**	**-0.01**
Maximum			**-0.20**

C.10.87.2. Acute Inhalation (Type S: f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.71E-11	1.71E-11	-0.03
URIN BLADDER	3.01E-11	3.01E-11	-0.02
BRAIN	1.23E-11	1.23E-11	0.03
BREAST	1.15E-11	1.15E-11	-0.01
GALL BLADDER	5.07E-11	N/A	N/A
HEART	1.90E-11	N/A	N/A

KIDNEYS	2.39E-11	2.39E-11	-0.03
LIVER	2.11E-11	2.11E-11	-0.02
MUSCLE	2.52E-11	2.52E-11	0.00
OVARIES	1.04E-10	1.04E-10	-0.01
PANCREAS	2.80E-11	2.80E-11	-0.02
TESTES	8.26E-12	8.26E-12	-0.02
THYROID	1.44E-11	1.44E-11	0.00
R.B.M.	3.15E-11	3.15E-11	-0.01
BONE SURFACE	2.06E-11	2.06E-11	-0.03
STOMACH	3.49E-10	3.49E-10	0.01
S.I.	6.79E-10	6.79E-10	-0.01
U.L.I.	1.95E-09	1.96E-09	-0.02
L.L.I.	2.07E-09	2.07E-09	-0.02
SKIN	1.08E-11	1.08E-11	0.02
SPLEEN	2.08E-11	2.08E-11	-0.02
THYMUS	2.13E-11	2.13E-11	-0.01
UTERUS	5.57E-11	5.57E-11	-0.01
ET	4.28E-09	4.28E-09	0.00
LUNG	1.21E-09	1.21E-09	-0.34
COLON	2.01E-09	2.01E-09	-0.04
ET1	6.94E-07	6.94E-07	0.00
ET2	3.59E-09	3.60E-09	-0.01
LN(ET)	2.84E-09	2.84E-09	-0.01
BBsec	2.58E-09	2.59E-09	-0.21
BBbas	2.33E-09	2.33E-09	-0.16
bb	7.00E-10	6.99E-10	0.07
AI	4.67E-10	4.67E-10	-0.02
LN(TH)	5.31E-11	5.32E-11	-0.02
ESOPHAGUS	2.13E-11	2.13E-11	-0.01
REMAINDER	**2.16E-09**	**2.16E-09**	**0.01**
C.E.D.	**5.65E-10**	**5.66E-10**	**-0.09**
Maximum			**-0.34**

C.10.87.3. Acute Ingestion (f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.28E-11	4.28E-11	0.01
URIN BLADDER	1.86E-10	1.86E-10	0.01
BRAIN	1.86E-11	1.86E-11	0.04
BREAST	2.14E-11	2.14E-11	0.03
GALL BLADDER	1.11E-10	N/A	N/A
HEART	2.99E-11	N/A	N/A
KIDNEYS	6.11E-11	6.11E-11	0.01
LIVER	4.87E-11	4.87E-11	0.01
MUSCLE	4.51E-11	4.51E-11	0.01
OVARIES	2.16E-10	2.17E-10	-0.01
PANCREAS	6.83E-11	6.83E-11	0.00
TESTES	3.36E-11	3.36E-11	0.02
THYROID	1.99E-11	1.99E-11	0.07
R.B.M.	1.56E-10	1.56E-10	0.01
BONE SURFACE	1.41E-10	1.41E-10	0.01
STOMACH	8.51E-10	8.51E-10	0.00
S.I.	1.29E-09	1.29E-09	0.02
U.L.I.	3.73E-09	3.73E-09	-0.02
L.L.I.	3.95E-09	3.95E-09	-0.03
SKIN	2.64E-11	2.64E-11	0.06
SPLEEN	5.18E-11	5.18E-11	0.02
THYMUS	2.21E-11	2.21E-11	0.03
UTERUS	1.26E-10	1.26E-10	0.03
ET	1.99E-11	1.99E-11	0.07
LUNG	2.56E-11	2.57E-11	-0.07
COLON	3.83E-09	3.83E-09	0.00
ET1	1.99E-11	1.99E-11	0.07
ET2	1.99E-11	1.99E-11	0.07
LN(ET)	1.99E-11	1.99E-11	0.07
BBsec	2.56E-11	2.56E-11	0.05
BBbas	2.56E-11	2.56E-11	0.05
bb	2.56E-11	2.56E-11	0.05
AI	2.56E-11	2.56E-11	0.05
LN(TH)	2.56E-11	2.56E-11	0.05
ESOPHAGUS	2.21E-11	2.21E-11	0.03
REMAINDER	**7.02E-11**	**7.03E-11**	**-0.03**
C.E.D.	**6.47E-10**	**6.47E-10**	**-0.02**
Maximum			**0.07**

C.10.87.4. Acute Ingestion (f_1 = 0.01)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.58E-11	2.58E-11	0.01
URIN BLADDER	7.32E-11	7.32E-11	-0.02
BRAIN	7.35E-13	7.35E-13	0.04
BREAST	5.91E-12	5.91E-12	0.01
GALL BLADDER	1.18E-10	N/A	N/A
HEART	1.30E-11	N/A	N/A
KIDNEYS	5.23E-11	5.23E-11	-0.01
LIVER	3.79E-11	3.79E-11	0.00
MUSCLE	3.41E-11	3.41E-11	-0.02
OVARIES	2.54E-10	2.54E-10	-0.03
PANCREAS	5.58E-11	5.58E-11	0.00
TESTES	2.01E-11	2.01E-11	0.00
THYROID	1.46E-12	1.46E-12	0.00
R.B.M.	5.42E-11	5.42E-11	-0.02
BONE SURFACE	2.54E-11	2.54E-11	-0.02
STOMACH	8.47E-10	8.47E-10	0.00
S.I.	1.67E-09	1.67E-09	0.01
U.L.I.	4.82E-09	4.82E-09	-0.01
L.L.I.	5.10E-09	5.10E-09	-0.03
SKIN	1.31E-11	1.31E-11	-0.04
SPLEEN	3.87E-11	3.87E-11	-0.01
THYMUS	4.44E-12	4.44E-12	0.00
UTERUS	1.36E-10	1.36E-10	0.01
ET	1.46E-12	1.46E-12	0.00
LUNG	8.56E-12	8.57E-12	-0.11
COLON	4.94E-09	4.94E-09	-0.02
ET1	1.46E-12	1.46E-12	0.00
ET2	1.46E-12	1.46E-12	0.00
LN(ET)	1.46E-12	1.46E-12	0.00
BBsec	8.56E-12	8.56E-12	0.00
BBbas	8.56E-12	8.56E-12	0.00
bb	8.56E-12	8.56E-12	0.00
AI	8.56E-12	8.56E-12	0.00
LN(TH)	8.56E-12	8.56E-12	0.00
ESOPHAGUS	4.44E-12	4.44E-12	0.00
REMAINDER	**6.72E-11**	**6.72E-11**	**-0.07**
C.E.D.	**7.63E-10**	**7.63E-10**	**-0.02**
Maximum			**-0.11**

C.10.88. ^{182}Ta – Tantalum-182

Maximum difference in ***Effective Dose***: **-0.26%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.33%** (Inhalation type "M'– Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.09%**

C.10.88.1. Acute Inhalation (Type M: f_1 = 0.001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.00E-09	1.00E-09	0.04
URIN BLADDER	4.46E-10	4.46E-10	0.01
BRAIN	3.39E-10	3.39E-10	0.01
BREAST	8.57E-10	8.57E-10	0.00
GALL BLADDER	6.46E-10	N/A	N/A
HEART	1.37E-09	N/A	N/A
KIDNEYS	2.03E-09	2.03E-09	-0.01
LIVER	8.36E-10	8.36E-10	0.00
MUSCLE	6.03E-10	6.03E-10	0.00
OVARIES	8.92E-10	8.92E-10	0.00
PANCREAS	8.13E-10	8.13E-10	0.00
TESTES	2.70E-10	2.70E-10	0.04
THYROID	5.43E-10	5.43E-10	0.01
R.B.M.	9.90E-10	9.90E-10	0.00
BONE SURFACE	1.28E-09	1.28E-09	0.02
STOMACH	8.23E-10	8.23E-10	0.00
S.I.	1.09E-09	1.09E-09	-0.01
U.L.I.	2.71E-09	2.71E-09	0.01
L.L.I.	6.32E-09	6.32E-09	0.00
SKIN	3.66E-10	3.66E-10	0.01
SPLEEN	7.93E-10	7.93E-10	0.00
THYMUS	1.04E-09	1.04E-09	-0.03
UTERUS	5.46E-10	5.46E-10	0.01
ET	2.01E-08	2.01E-08	-0.02
LUNG	3.86E-08	3.88E-08	-0.33
COLON	4.27E-09	4.27E-09	0.03
ET1	2.51E-06	2.51E-06	-0.01
ET2	1.76E-08	1.76E-08	-0.03
LN(ET)	1.08E-08	1.08E-08	0.04
BBsec	9.68E-08	9.70E-08	-0.21
BBbas	6.48E-08	6.49E-08	-0.20
bb	2.31E-08	2.30E-08	0.16
AI	1.21E-08	1.21E-08	0.00
LN(TH)	4.11E-09	4.11E-09	-0.01
ESOPHAGUS	1.04E-09	1.04E-09	-0.03
REMAINDER	**6.27E-10**	**6.27E-10**	**0.04**
C.E.D.	**5.78E-09**	**5.79E-09**	**-0.26**
Maximum			**-0.33**

C.10.88.2. Acute Inhalation (Type S: f_1 = 0.001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.11E-09	1.11E-09	-0.05
URIN BLADDER	2.18E-10	2.18E-10	-0.03
BRAIN	1.31E-10	1.31E-10	-0.02
BREAST	1.18E-09	1.18E-09	-0.02
GALL BLADDER	5.50E-10	N/A	N/A
HEART	1.98E-09	N/A	N/A
KIDNEYS	5.11E-10	5.12E-10	-0.02
LIVER	9.85E-10	9.85E-10	-0.02
MUSCLE	5.65E-10	5.65E-10	-0.02
OVARIES	6.61E-10	6.61E-10	0.00
PANCREAS	8.46E-10	8.46E-10	-0.02
TESTES	7.42E-11	7.42E-11	-0.01
THYROID	4.98E-10	4.98E-10	-0.01
R.B.M.	7.08E-10	7.08E-10	-0.02
BONE SURFACE	6.06E-10	6.06E-10	-0.02
STOMACH	8.51E-10	8.51E-10	-0.01
S.I.	9.05E-10	9.05E-10	0.00
U.L.I.	2.58E-09	2.58E-09	0.01
L.L.I.	6.25E-09	6.25E-09	0.00
SKIN	2.93E-10	2.93E-10	-0.03
SPLEEN	8.52E-10	8.52E-10	-0.01
THYMUS	1.40E-09	1.40E-09	-0.04
UTERUS	3.16E-10	3.16E-10	-0.01
ET	2.60E-08	2.60E-08	-0.03
LUNG	5.27E-08	5.29E-08	-0.30
COLON	4.17E-09	4.17E-09	0.02
ET1	2.51E-06	2.51E-06	0.01
ET2	2.36E-08	2.36E-08	-0.03
LN(ET)	1.19E-08	1.19E-08	-0.01
BBsec	1.24E-07	1.24E-07	-0.24
BBbas	8.37E-08	8.39E-08	-0.20
bb	3.31E-08	3.30E-08	0.13
AI	2.14E-08	2.14E-08	-0.01
LN(TH)	7.62E-09	7.62E-09	-0.03
ESOPHAGUS	1.40E-09	1.40E-09	-0.04
REMAINDER	**5.67E-10**	**5.66E-10**	**0.09**
C.E.D.	**7.40E-09**	**7.41E-09**	**-0.25**
Maximum			**-0.30**

C.10.88.3. Acute Ingestion (f_1 = 0.001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.88E-11	8.88E-11	0.01
URIN BLADDER	4.23E-10	4.23E-10	0.00
BRAIN	6.18E-12	6.18E-12	0.03
BREAST	2.23E-11	2.23E-11	0.02
GALL BLADDER	3.84E-10	N/A	N/A
HEART	4.34E-11	N/A	N/A
KIDNEYS	2.16E-10	2.16E-10	0.00
LIVER	1.28E-10	1.28E-10	0.00
MUSCLE	1.62E-10	1.62E-10	0.02
OVARIES	1.35E-09	1.35E-09	-0.01
PANCREAS	1.67E-10	1.67E-10	0.01
TESTES	1.33E-10	1.33E-10	-0.01
THYROID	9.01E-12	9.01E-12	0.02
R.B.M.	2.53E-10	2.53E-10	-0.02
BONE SURFACE	1.42E-10	1.42E-10	0.01
STOMACH	6.17E-10	6.17E-10	0.00
S.I.	1.77E-09	1.77E-09	0.03
U.L.I.	5.54E-09	5.54E-09	0.01

L.L.I.	1.40E-08	1.40E-08	-0.02
SKIN	6.39E-11	6.39E-11	0.00
SPLEEN	1.32E-10	1.32E-10	-0.03
THYMUS	1.85E-11	1.85E-11	0.03
UTERUS	5.95E-10	5.95E-10	0.01
ET	9.01E-12	9.01E-12	0.02
LUNG	3.13E-11	3.13E-11	-0.09
COLON	9.20E-09	9.20E-09	0.04
ET1	9.01E-12	9.01E-12	0.02
ET2	9.01E-12	9.01E-12	0.02
LN(ET)	9.01E-12	9.01E-12	0.02
BBsec	3.13E-11	3.13E-11	0.01
BBbas	3.13E-11	3.13E-11	0.01
bb	3.13E-11	3.13E-11	0.01
AI	3.13E-11	3.13E-11	0.01
LN(TH)	3.13E-11	3.13E-11	0.01
ESOPHAGUS	1.85E-11	1.85E-11	0.03
REMAINDER	**1.90E-10**	**1.90E-10**	**-0.07**
C.E.D.	**1.52E-09**	**1.52E-09**	**0.03**
Maximum			**-0.09**

C.10.89. ^{160}Tb – Terbium-160

Maximum difference in ***Effective Dose***: **-0.24%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.32%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.08%**.

C.10.89.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.0475E-09	1.0480E-09	-0.05
URIN BLADDER	2.8029E-10	2.8030E-10	0.00
BRAIN	2.3942E-10	2.3940E-10	0.01
BREAST	6.1772E-10	6.1780E-10	-0.01
GALL BLADDER	9.8791E-10	N/A	N/A
HEART	1.0853E-09	N/A	N/A
KIDNEYS	1.0036E-09	1.0040E-09	-0.04
LIVER	4.0771E-09	4.0780E-09	-0.02
MUSCLE	4.5932E-10	4.5940E-10	-0.02
OVARIES	7.4809E-10	7.4820E-10	-0.01
PANCREAS	7.7872E-10	7.7880E-10	-0.01
TESTES	1.2075E-10	1.2080E-10	-0.04
THYROID	3.4747E-10	3.4750E-10	-0.01
R.B.M.	2.2108E-09	2.2110E-09	-0.01
BONE SURFACE	1.0969E-08	1.0970E-08	-0.01
STOMACH	6.8608E-10	6.8610E-10	0.00
S.I.	1.0301E-09	1.0300E-09	0.01
U.L.I.	2.8450E-09	2.8450E-09	0.00
L.L.I.	6.7412E-09	6.7420E-09	-0.01
SKIN	2.5747E-10	2.5750E-10	-0.01
SPLEEN	5.3890E-10	5.3900E-10	-0.02
THYMUS	7.3464E-10	7.3470E-10	-0.01
UTERUS	4.0267E-10	4.0270E-10	-0.01
ET	1.6567E-08	1.6570E-08	-0.02
LUNG	3.2744E-08	3.2850E-08	-0.32
COLON	4.5298E-09	4.5280E-09	0.04
ET1	2.3809E-06	2.3810E-06	0.00
ET2	1.4205E-08	1.4210E-08	-0.04
LN(ET)	9.3182E-09	9.3180E-09	0.00
BBsec	7.9890E-08	8.0060E-08	-0.21
BBbas	5.7101E-08	5.7220E-08	-0.21
bb	1.9115E-08	1.9090E-08	0.13
AI	1.0711E-08	1.0710E-08	0.01
LN(TH)	3.0539E-09	3.0540E-09	0.00
ESOPHAGUS	7.3464E-10	7.3470E-10	-0.01
REMAINDER	**4.7633E-10**	**4.7620E-10**	**0.03**
C.E.D.	**5.4090E-09**	**5.4220E-09**	**-0.24**
Maximum			**-0.32**

C.10.89.2. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.7751E-11	7.7750E-11	0.00
URIN BLADDER	3.6428E-10	3.6430E-10	-0.01
BRAIN	2.5823E-12	2.5820E-12	0.01
BREAST	1.7429E-11	1.7430E-11	-0.01
GALL BLADDER	3.3629E-10	N/A	N/A
HEART	3.6422E-11	N/A	N/A
KIDNEYS	1.6610E-10	1.6610E-10	0.00
LIVER	1.5046E-10	1.5050E-10	-0.03
MUSCLE	1.3903E-10	1.3900E-10	0.02
OVARIES	1.1822E-09	1.1820E-09	0.02
PANCREAS	1.4553E-10	1.4550E-10	0.02
TESTES	1.1497E-10	1.1500E-10	-0.03
THYROID	4.5882E-12	4.5880E-12	0.00
R.B.M.	2.3579E-10	2.3580E-10	0.00
BONE SURFACE	2.2485E-10	2.2490E-10	-0.02
STOMACH	6.1659E-10	6.1660E-10	0.00
S.I.	1.7398E-09	1.7400E-09	-0.01
U.L.I.	5.9992E-09	5.9990E-09	0.00
L.L.I.	1.5587E-08	1.5590E-08	-0.02
SKIN	5.3236E-11	5.3240E-11	-0.01
SPLEEN	1.1145E-10	1.1140E-10	0.04
THYMUS	1.3564E-11	1.3560E-11	0.03
UTERUS	5.1899E-10	5.1900E-10	0.00
ET	4.5882E-12	4.5880E-12	0.00
LUNG	2.5795E-11	2.5820E-11	-0.10
COLON	1.0145E-08	1.0140E-08	0.05
ET1	4.5882E-12	4.5880E-12	0.00
ET2	4.5882E-12	4.5880E-12	0.00
LN(ET)	4.5882E-12	4.5880E-12	0.00
BBsec	2.5795E-11	2.5800E-11	-0.02
BBbas	2.5795E-11	2.5800E-11	-0.02
bb	2.5795E-11	2.5800E-11	-0.02
AI	2.5795E-11	2.5800E-11	-0.02
LN(TH)	2.5795E-11	2.5800E-11	-0.02
ESOPHAGUS	1.3564E-11	1.3560E-11	0.03
REMAINDER	**1.6707E-10**	**1.6720E-10**	**-0.08**
C.E.D.	**1.5979E-09**	**1.5970E-09**	**0.06**
Maximum			**-0.10**

C.10.90. ^{99}Tc – Technetium-99

Maximum difference in ***Effective Dose***: **-0.31%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.36%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.09%**

C.10.90.1. Acute Inhalation (Type F: f_1 = 0.8)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.4127E-11	3.410E-11	0.08
URIN BLADDER	1.4145E-10	1.414E-10	0.04
BRAIN	3.4127E-11	3.410E-11	0.08
BREAST	3.4127E-11	3.410E-11	0.08
GALL BLADDER	3.4127E-11	N/A	N/A
HEART	3.4127E-11	N/A	N/A
KIDNEYS	3.4127E-11	3.410E-11	0.08
LIVER	4.5443E-11	4.548E-11	-0.08
MUSCLE	3.4127E-11	3.410E-11	0.08
OVARIES	3.4127E-11	3.410E-11	0.08
PANCREAS	3.4127E-11	3.410E-11	0.08
TESTES	3.4127E-11	3.410E-11	0.08
THYROID	8.9137E-10	8.914E-10	0
R.B.M.	3.4127E-11	3.410E-11	0.08
BONE SURFACE	3.4127E-11	3.410E-11	0.08
STOMACH	1.8305E-09	1.832E-09	-0.08
S.I.	4.5796E-11	4.577E-11	0.06
U.L.I.	4.9425E-10	4.942E-10	0.01
L.L.I.	1.3841E-09	1.384E-09	0.01
SKIN	3.4127E-11	3.410E-11	0.08
SPLEEN	3.4127E-11	3.410E-11	0.08
THYMUS	3.4127E-11	3.410E-11	0.08
UTERUS	3.4127E-11	3.410E-11	0.08
ET	1.7023E-09	1.702E-09	0.02
LUNG	5.3923E-11	5.401E-11	-0.16
COLON	8.7903E-10	8.787E-10	0.04
ET1	1.4131E-06	1.413E-06	0.01
ET2	2.8983E-10	2.898E-10	0.01
LN(ET)	3.4127E-11	3.410E-11	0.08
BBsec	9.3928E-11	9.403E-11	-0.11
BBbas	7.6558E-11	7.662E-11	-0.08
bb	4.1780E-11	4.173E-11	0.12
AI	3.4806E-11	3.478E-11	0.07
LN(TH)	3.4127E-11	3.410E-11	0.08
ESOPHAGUS	3.4127E-11	3.410E-11	0.08
REMAINDER	**3.5183E-11**	**3.516E-11**	**0.07**
C.E.D.	**4.0230E-10**	**4.024E-10**	**-0.02**
Maximum			**-0.16**

C.10.90.2. Acute Inhalation (Type M: f_1 = 0.8)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.0727E-11	3.070E-11	0.09
URIN BLADDER	1.2736E-10	1.273E-10	0.05
BRAIN	3.0727E-11	3.070E-11	0.09
BREAST	3.0727E-11	3.070E-11	0.09
GALL BLADDER	3.0727E-11	N/A	N/A
HEART	3.0727E-11	N/A	N/A
KIDNEYS	3.0727E-11	3.070E-11	0.09
LIVER	4.0916E-11	4.095E-11	-0.08
MUSCLE	3.0727E-11	3.070E-11	0.09
OVARIES	3.0727E-11	3.070E-11	0.09
PANCREAS	3.0727E-11	3.070E-11	0.09
TESTES	3.0727E-11	3.070E-11	0.09
THYROID	8.0257E-10	8.026E-10	0
R.B.M.	3.0727E-11	3.070E-11	0.09
BONE SURFACE	3.0727E-11	3.070E-11	0.09
STOMACH	1.6762E-09	1.677E-09	-0.05
S.I.	5.5216E-11	5.519E-11	0.05
U.L.I.	5.2963E-10	5.296E-10	0.01
L.L.I.	1.4945E-09	1.495E-09	-0.03
SKIN	3.0727E-11	3.070E-11	0.09
SPLEEN	3.0727E-11	3.070E-11	0.09
THYMUS	3.0727E-11	3.070E-11	0.09
UTERUS	3.0727E-11	3.070E-11	0.09
ET	8.2570E-09	8.259E-09	-0.02
LUNG	2.3785E-08	2.387E-08	-0.36
COLON	9.4686E-10	9.465E-10	0.04
ET1	1.4130E-06	1.413E-06	0
ET2	6.8571E-09	6.859E-09	-0.03
LN(ET)	5.9111E-10	5.912E-10	-0.02
BBsec	5.8388E-08	5.851E-08	-0.21
BBbas	4.1946E-08	4.204E-08	-0.22
bb	1.3170E-08	1.315E-08	0.15
AI	8.0862E-09	8.088E-09	-0.02
LN(TH)	1.3377E-09	1.338E-09	-0.02
ESOPHAGUS	3.0727E-11	3.070E-11	0.09
REMAINDER	**3.5248E-11**	**3.523E-11**	**0.05**
C.E.D.	**3.2328E-09**	**3.243E-09**	**-0.31**
Maximum			**-0.36**

C.10.90.3. Acute Ingestion (f_1 = 0.8)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.1900E-11	6.185E-11	0.08
URIN BLADDER	2.5655E-10	2.565E-10	0.02
BRAIN	6.1900E-11	6.185E-11	0.08
BREAST	6.1900E-11	6.185E-11	0.08
GALL BLADDER	6.1900E-11	N/A	N/A
HEART	6.1900E-11	N/A	N/A
KIDNEYS	6.1900E-11	6.185E-11	0.08
LIVER	8.2424E-11	8.248E-11	-0.07
MUSCLE	6.1900E-11	6.185E-11	0.08
OVARIES	6.1900E-11	6.185E-11	0.08
PANCREAS	6.1900E-11	6.185E-11	0.08
TESTES	6.1900E-11	6.185E-11	0.08
THYROID	1.6167E-09	1.617E-09	-0.02
R.B.M.	6.1900E-11	6.185E-11	0.08
BONE SURFACE	6.1900E-11	6.185E-11	0.08
STOMACH	3.3945E-09	3.397E-09	-0.07
S.I.	1.2025E-10	1.202E-10	0.04
U.L.I.	1.1215E-09	1.121E-09	0.04
L.L.I.	3.1707E-09	3.171E-09	-0.01
SKIN	6.1900E-11	6.185E-11	0.08
SPLEEN	6.1900E-11	6.185E-11	0.08
THYMUS	6.1900E-11	6.185E-11	0.08

UTERUS	6.1900E-11	6.185E-11	0.08
ET	6.1900E-11	6.185E-11	0.08
LUNG	6.1900E-11	6.191E-11	-0.02
COLON	2.0077E-09	2.007E-09	0.03
ET1	6.1900E-11	6.185E-11	0.08
ET2	6.1900E-11	6.185E-11	0.08
LN(ET)	6.1900E-11	6.185E-11	0.08
BBsec	6.1900E-11	6.185E-11	0.08
BBbas	6.1900E-11	6.185E-11	0.08
bb	6.1900E-11	6.185E-11	0.08
AI	6.1900E-11	6.185E-11	0.08
LN(TH)	6.1900E-11	6.185E-11	0.08
ESOPHAGUS	6.1900E-11	6.185E-11	0.08
REMAINDER	**6.3114E-11**	**6.306E-11**	**0.09**
C.E.D.	**7.8387E-10**	**7.840E-10**	**-0.02**
Maximum			**0.09**

C.10.91. ^{131}Te – Tellurium-131 (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: **-51.7%** (Vapor – f_1 = 0.3).
Maximum difference in ***Organ Dose*** **(excluding *Remainder*)**: +**1095.04%** (Ingestion – Bone Surface).
Maximum difference excluding ***Respiratory Tract***: **+3434.79%**

C.10.91.1. Vapor (f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.69E-12	3.14E-12	17.62
URIN BLADDER	8.02E-12	8.23E-12	-2.61
BRAIN	3.04E-12	2.87E-12	5.63
BREAST	3.12E-12	2.88E-12	8.56
GALL BLADDER	3.42E-12	N/A	N/A
HEART	3.73E-12	N/A	N/A
KIDNEYS	6.44E-12	3.11E-12	106.86
LIVER	3.39E-12	3.01E-12	12.73
MUSCLE	3.24E-12	3.03E-12	7.08
OVARIES	3.52E-12	2.95E-12	19.59
PANCREAS	3.86E-12	3.40E-12	13.59
TESTES	2.91E-12	2.59E-12	12.49
THYROID	7.21E-12	8.42E-10	-99.14
R.B.M.	5.83E-12	3.16E-12	84.77
BONE SURFACE	2.89E-11	3.38E-12	755.41
STOMACH	3.10E-11	3.06E-11	1.26
S.I.	1.18E-11	1.12E-11	5.62
U.L.I.	7.56E-12	5.96E-12	26.80
L.L.I.	6.72E-12	3.22E-12	108.89
SKIN	2.84E-12	2.62E-12	8.67
SPLEEN	3.56E-12	3.15E-12	13.04
THYMUS	3.50E-12	3.37E-12	4.03
UTERUS	3.42E-12	2.96E-12	15.59
ET	2.30E-10	2.30E-10	0.07
LUNG	1.61E-10	1.61E-10	-0.04
COLON	7.20E-12	4.78E-12	50.67
ET1	1.71E-08	1.71E-08	-0.02
ET2	2.14E-10	2.13E-10	0.07
LN(ET)	3.68E-11	3.67E-11	0.42
BBsec	3.58E-10	3.57E-10	0.06
BBbas	3.16E-10	3.16E-10	0.07
bb	1.16E-10	1.16E-10	0.24
AI	3.04E-11	3.02E-11	0.84
LN(TH)	4.58E-12	4.32E-12	5.92
ESOPHAGUS	3.50E-12	3.37E-12	4.03
REMAINDER	**1.17E-10**	**3.31E-12**	**3434.79**
C.E.D.	**3.27E-11**	**6.78E-11**	**-51.70**
Maximum			**3434.79**

C.10.91.2. Acute Inhalation (Type F: f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.59E-12	1.37E-12	16.15
URIN BLADDER	3.26E-12	3.49E-12	-6.63
BRAIN	1.55E-12	1.51E-12	2.27
BREAST	1.28E-12	1.19E-12	7.43
GALL BLADDER	1.66E-12	N/A	N/A
HEART	1.57E-12	N/A	N/A
KIDNEYS	2.79E-12	1.42E-12	96.14
LIVER	1.42E-12	1.27E-12	12.11
MUSCLE	1.63E-12	1.56E-12	4.45
OVARIES	1.79E-12	1.47E-12	21.22
PANCREAS	2.17E-12	1.99E-12	9.37
TESTES	1.17E-12	1.04E-12	12.72
THYROID	3.23E-12	4.44E-10	-99.27
R.B.M.	2.61E-12	1.52E-12	71.97
BONE SURFACE	1.22E-11	1.68E-12	625.06
STOMACH	5.59E-11	5.58E-11	0.29
S.I.	1.82E-11	1.77E-11	2.52
U.L.I.	7.84E-12	6.38E-12	22.94
L.L.I.	5.40E-12	1.89E-12	185.44
SKIN	1.27E-12	1.18E-12	6.85
SPLEEN	1.80E-12	1.64E-12	10.10
THYMUS	1.70E-12	1.68E-12	1.30
UTERUS	1.64E-12	1.43E-12	15.12
ET	5.08E-10	5.08E-10	0.02
LUNG	2.45E-11	2.46E-11	-0.02
COLON	6.79E-12	4.44E-12	52.82
ET1	5.79E-08	5.79E-08	0.02
ET2	4.51E-10	4.51E-10	0.00
LN(ET)	1.04E-10	1.04E-10	0.05
BBsec	6.25E-11	6.25E-11	-0.05
BBbas	5.53E-11	5.53E-11	-0.04
bb	9.72E-12	9.63E-12	0.98
AI	5.12E-12	5.03E-12	1.64
LN(TH)	1.68E-12	1.59E-12	5.21
ESOPHAGUS	1.70E-12	1.68E-12	1.30
REMAINDER	**2.55E-10**	**2.55E-10**	**0.04**
C.E.D.	**2.46E-11**	**4.60E-11**	**-46.59**
Maximum			**625.06**

C.10.91.3. Acute Inhalation (Type M: f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.46E-13	7.61E-13	11.10
URIN BLADDER	7.81E-13	1.17E-12	-33.17
BRAIN	6.62E-13	7.13E-13	-7.06
BREAST	5.76E-13	5.63E-13	2.45
GALL BLADDER	9.70E-13	N/A	N/A
HEART	9.72E-13	N/A	N/A
KIDNEYS	1.28E-12	6.74E-13	89.66
LIVER	6.64E-13	6.03E-13	10.15
MUSCLE	8.55E-13	8.61E-13	-0.74
OVARIES	1.11E-12	8.20E-13	35.26
PANCREAS	1.81E-12	1.74E-12	4.38
TESTES	2.47E-13	1.90E-13	29.96
THYROID	1.41E-12	3.91E-10	-99.64
R.B.M.	1.24E-12	7.75E-13	60.26
BONE SURFACE	5.40E-12	8.40E-13	542.45
STOMACH	9.06E-11	9.05E-11	0.09
S.I.	2.82E-11	2.77E-11	2.08
U.L.I.	1.08E-11	8.55E-12	26.41
L.L.I.	7.18E-12	1.49E-12	382.14
SKIN	4.56E-13	4.45E-13	2.53
SPLEEN	1.27E-12	1.21E-12	5.42
THYMUS	9.87E-13	1.04E-12	-5.47
UTERUS	8.67E-13	7.18E-13	20.64
ET	7.45E-10	7.45E-10	0.00
LUNG	8.69E-11	8.72E-11	-0.38
COLON	9.24E-12	5.50E-12	68.02
ET1	5.79E-08	5.79E-08	0.02
ET2	6.88E-10	6.89E-10	-0.01
LN(ET)	1.13E-10	1.13E-10	-0.04
BBsec	2.26E-10	2.27E-10	-0.18
BBbas	1.96E-10	1.96E-10	-0.21
bb	3.46E-11	3.46E-11	0.13
AI	1.53E-11	1.53E-11	-0.03
LN(TH)	1.55E-12	1.56E-12	-0.49
ESOPHAGUS	9.87E-13	1.04E-12	-5.47
REMAINDER	**3.73E-10**	**3.73E-10**	**-0.01**
C.E.D.	**4.17E-11**	**6.06E-11**	**-31.19**
Maximum			**542.45**

C.10.91.4. Acute Ingestion (f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.70E-12	1.54E-12	10.37
URIN BLADDER	1.43E-12	2.36E-12	-39.64
BRAIN	2.49E-13	3.87E-13	-35.73
BREAST	5.27E-13	5.15E-13	2.41
GALL BLADDER	2.64E-12	N/A	N/A
HEART	1.28E-12	N/A	N/A
KIDNEYS	2.92E-12	1.72E-12	69.99
LIVER	1.19E-12	1.08E-12	10.94
MUSCLE	9.93E-13	1.03E-12	-3.34
OVARIES	3.17E-12	2.51E-12	26.41
PANCREAS	5.41E-12	5.26E-12	2.78
TESTES	3.98E-13	2.85E-13	39.36
THYROID	1.60E-12	8.90E-10	-99.82
R.B.M.	1.97E-12	1.06E-12	86.91
BONE SURFACE	9.83E-12	8.23E-13	1095.04
STOMACH	3.29E-10	3.28E-10	0.06
S.I.	1.02E-10	1.00E-10	1.33
U.L.I.	3.59E-11	3.05E-11	17.84
L.L.I.	1.86E-11	4.84E-12	284.06
SKIN	4.94E-13	4.86E-13	1.65
SPLEEN	3.50E-12	3.37E-12	3.71
THYMUS	4.70E-13	6.23E-13	-24.67
UTERUS	2.46E-12	2.13E-12	15.27
ET	2.77E-13	4.22E-13	-34.19
LUNG	7.64E-13	8.05E-13	-5.10
COLON	2.84E-11	1.94E-11	46.54
ET1	2.77E-13	4.22E-13	-34.19
ET2	2.77E-13	4.22E-13	-34.19
LN(ET)	2.77E-13	4.22E-13	-34.19
BBsec	7.64E-13	8.04E-13	-5.00
BBbas	7.64E-13	8.04E-13	-5.00
bb	7.64E-13	8.04E-13	-5.00
AI	7.64E-13	8.04E-13	-5.00
LN(TH)	7.64E-13	8.04E-13	-5.00
ESOPHAGUS	4.70E-13	6.23E-13	-24.67
REMAINDER	**3.10E-12**	**3.10E-12**	**0.12**
C.E.D.	**4.43E-11**	**8.73E-11**	**-49.25**
Maximum			**1095.04**

Note: ICRP Publication 68 (ICRP 1994b) tabulated dose coefficients (and **PLEIADES**) assume independent progeny kinetics for ^{131}I. IMBA assigns the tellurium metabolic model also to iodine. Thus, for the thyroid, IMBA's calculated doses are as much as ***556-fold lower*** (-99.82%) than those calculated by ICRP/**PLEIADES**).

C.10.92. ^{131m}Te – Tellurium-131m (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: **-77.88%** (Vapor – f_1 = 0.3).
Maximum difference in ***Organ Dose*** **(excluding *Remainder*)**: +**140.56%** (Ingestion – Bone Surface).
Maximum difference excluding ***Respiratory Tract***: **+3946.37%**

C.10.92.1. Vapor (f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.59E-10	2.20E-10	17.37
URIN BLADDER	7.00E-10	7.13E-10	-1.71
BRAIN	1.85E-10	1.69E-10	9.05
BREAST	1.57E-10	1.39E-10	12.97
GALL BLADDER	2.47E-10	N/A	N/A
HEART	2.07E-10	N/A	N/A
KIDNEYS	8.28E-10	5.87E-10	40.98
LIVER	2.13E-10	1.87E-10	14.18
MUSCLE	2.07E-10	1.89E-10	9.41
OVARIES	3.40E-10	3.06E-10	11.23
PANCREAS	2.44E-10	2.12E-10	15.06
TESTES	1.84E-10	1.62E-10	13.35
THYROID	9.36E-10	3.99E-08	-97.66
R.B.M.	6.44E-10	4.43E-10	45.32
BONE SURFACE	3.28E-09	1.33E-09	146.07
STOMACH	2.61E-10	2.36E-10	10.78
S.I.	3.90E-10	3.57E-10	9.41
U.L.I.	9.91E-10	9.37E-10	5.82
L.L.I.	1.67E-09	1.58E-09	6.18
SKIN	1.54E-10	1.37E-10	12.18
SPLEEN	2.20E-10	1.91E-10	14.91
THYMUS	1.98E-10	1.84E-10	7.70
UTERUS	2.80E-10	2.50E-10	11.89
ET	3.12E-09	3.11E-09	0.51
LUNG	4.01E-10	3.81E-10	5.18
COLON	1.29E-09	1.21E-09	6.10
ET1	4.78E-07	4.78E-07	0.00
ET2	2.65E-09	2.63E-09	0.60
LN(ET)	2.46E-09	2.44E-09	0.65
BBsec	6.76E-10	6.56E-10	3.09
BBbas	5.64E-10	5.44E-10	3.73
bb	3.69E-10	3.49E-10	5.80
AI	2.13E-10	1.93E-10	10.56
LN(TH)	2.01E-10	1.80E-10	11.22
ESOPHAGUS	1.98E-10	1.84E-10	7.70
REMAINDER	**2.18E-10**	**1.97E-10**	**10.34**
C.E.D.	**5.34E-10**	**2.42E-09**	**-77.88**
Maximum			**146.07**

C.10.92.2. Acute Inhalation (Type F: f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.16E-10	1.00E-10	15.71
URIN BLADDER	3.16E-10	3.22E-10	-1.85
BRAIN	1.03E-10	9.65E-11	6.31
BREAST	7.33E-11	6.60E-11	11.09
GALL BLADDER	1.38E-10	N/A	N/A
HEART	9.71E-11	N/A	N/A
KIDNEYS	3.57E-10	2.57E-10	38.51
LIVER	1.01E-10	8.99E-11	12.1
MUSCLE	1.18E-10	1.11E-10	6.5
OVARIES	2.40E-10	2.25E-10	6.47
PANCREAS	1.19E-10	1.06E-10	12.36
TESTES	8.42E-11	7.53E-11	11.86
THYROID	4.10E-10	1.71E-08	-97.61
R.B.M.	2.97E-10	2.15E-10	38.48
BONE SURFACE	1.37E-09	5.71E-10	140.1
STOMACH	2.06E-10	1.96E-10	5.35
S.I.	3.61E-10	3.46E-10	4.34
U.L.I.	1.08E-09	1.05E-09	2.62
L.L.I.	1.90E-09	1.84E-09	2.88
SKIN	7.76E-11	7.07E-11	9.65
SPLEEN	1.04E-10	9.26E-11	12.66
THYMUS	1.13E-10	1.07E-10	5.29
UTERUS	1.62E-10	1.50E-10	8.27
ET	9.68E-09	9.68E-09	0.07
LUNG	1.27E-10	1.19E-10	6.73
COLON	1.43E-09	1.39E-09	2.8
ET1	1.62E-06	1.62E-06	0.02
ET2	8.08E-09	8.07E-09	0.08
LN(ET)	7.70E-09	7.70E-09	0.08
BBsec	1.81E-10	1.73E-10	4.64
BBbas	1.62E-10	1.53E-10	5.29
bb	1.09E-10	1.01E-10	8.17
AI	1.01E-10	9.24E-11	8.87
LN(TH)	9.90E-11	9.08E-11	9.03
ESOPHAGUS	1.13E-10	1.07E-10	5.29
REMAINDER	**4.90E-09**	**1.21E-10**	**3946.37**
C.E.D.	**6.06E-10**	**1.17E-09**	**-48.41**
Maximum			**3946.37**

C.10.92.3. Acute Inhalation (Type M: f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.15E-11	8.46E-11	8.17
URIN BLADDER	1.90E-10	1.94E-10	-2.48
BRAIN	6.29E-11	6.07E-11	3.56
BREAST	6.71E-11	6.40E-11	4.77
GALL BLADDER	1.38E-10	N/A	N/A
HEART	1.02E-10	N/A	N/A
KIDNEYS	1.92E-10	1.48E-10	29.88
LIVER	8.83E-11	8.35E-11	5.75
MUSCLE	9.88E-11	9.59E-11	3.01
OVARIES	2.99E-10	2.91E-10	2.66
PANCREAS	1.04E-10	9.79E-11	5.93
TESTES	5.29E-11	4.89E-11	8.14
THYROID	2.02E-10	9.45E-09	-97.87
R.B.M.	1.86E-10	1.49E-10	24.39
BONE SURFACE	6.29E-10	2.75E-10	128.83
STOMACH	2.97E-10	2.92E-10	1.63
S.I.	5.49E-10	5.40E-10	1.79
U.L.I.	1.77E-09	1.75E-09	1.44
L.L.I.	3.17E-09	3.11E-09	1.84
SKIN	5.39E-11	5.11E-11	5.58
SPLEEN	8.80E-11	8.28E-11	6.24
THYMUS	1.02E-10	1.00E-10	1.92
UTERUS	1.62E-10	1.56E-10	3.85
ET	1.03E-08	1.03E-08	0.04
LUNG	3.60E-09	3.61E-09	-0.27
COLON	2.38E-09	2.34E-09	1.70
ET1	1.62E-06	1.62E-06	0.03
ET2	8.69E-09	8.69E-09	0.03
LN(ET)	7.75E-09	7.75E-09	0.03
BBsec	9.21E-09	9.22E-09	-0.16
BBbas	7.27E-09	7.28E-09	-0.15
bb	1.83E-09	1.82E-09	0.32
AI	7.48E-10	7.45E-10	0.43
LN(TH)	1.91E-10	1.88E-10	1.75
ESOPHAGUS	1.02E-10	1.00E-10	1.92
REMAINDER	**5.20E-09**	**5.20E-09**	**0.05**
C.E.D.	**1.13E-09**	**1.58E-09**	**-28.34**
Maximum			**128.83**

C.10.92.4. Acute Ingestion (f_1 = 0.3)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.36E-10	1.22E-10	11.14
URIN BLADDER	4.19E-10	4.29E-10	-2.23
BRAIN	6.01E-11	5.59E-11	7.66
BREAST	6.26E-11	5.65E-11	10.70
GALL BLADDER	3.04E-10	N/A	N/A
HEART	9.24E-11	N/A	N/A
KIDNEYS	3.85E-10	2.98E-10	29.30
LIVER	1.42E-10	1.33E-10	7.18
MUSCLE	1.44E-10	1.38E-10	4.13
OVARIES	7.31E-10	7.16E-10	2.14
PANCREAS	1.87E-10	1.76E-10	6.51
TESTES	1.18E-10	1.10E-10	7.13
THYROID	3.20E-10	1.85E-08	-98.27
R.B.M.	3.36E-10	2.63E-10	27.39
BONE SURFACE	1.20E-09	4.98E-10	140.56
STOMACH	6.75E-10	6.66E-10	1.43
S.I.	1.36E-09	1.34E-09	1.43
U.L.I.	4.45E-09	4.40E-09	1.14
L.L.I.	7.98E-09	7.87E-09	1.44
SKIN	7.99E-11	7.43E-11	7.58
SPLEEN	1.50E-10	1.40E-10	7.29
THYMUS	7.12E-11	6.73E-11	5.67
UTERUS	3.86E-10	3.74E-10	3.15
ET	6.60E-11	6.17E-11	6.94
LUNG	7.97E-11	7.33E-11	8.78
COLON	5.97E-09	5.90E-09	1.35
ET1	6.60E-11	6.17E-11	6.94
ET2	6.60E-11	6.17E-11	6.94
LN(ET)	6.60E-11	6.17E-11	6.94
BBsec	7.97E-11	7.32E-11	8.90
BBbas	7.97E-11	7.32E-11	8.90
bb	7.97E-11	7.32E-11	8.90
AI	7.97E-11	7.32E-11	8.90
LN(TH)	7.97E-11	7.32E-11	8.90
ESOPHAGUS	7.12E-11	6.73E-11	5.67
REMAINDER	**1.68E-10**	**1.62E-10**	**4.18**
C.E.D.	**1.07E-09**	**1.94E-09**	**-45.14**
Maximum			**140.56**

Note: ICRP Publication 68 (ICRP 1994b) tabulated dose coefficients (and **PLEIADES**) assume independent progeny kinetics for ^{131}I. IMBA assigns the tellurium metabolic model also to iodine. Thus, for the thyroid, IMBA's calculated doses are as much as ***57.8-fold lower*** (-99.27%) than those calculated by ICRP/**PLEIADES**).

C.10.93. ^{228}Th – Thorium-228 (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: **+94%** (Ingestion - f_1 = 0.0005).
Maximum difference in ***Organ Dose***: **+147%** (Inhalation - type "M" – Bone Surface).
Maximum difference excluding ***Respiratory Tract***: **+74,933%** (Remainder).

C.10.93.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.1422E-07	7.7E-07	19
URIN BLADDER	9.0832E-07	7.8E-07	16
BRAIN	9.0983E-07	7.7E-07	18
BREAST	9.0878E-07	7.7E-07	18
GALL BLADDER	9.1042E-07	N/A	N/A
HEART	9.1100E-07	N/A	N/A
KIDNEYS	1.6357E-05	7.3E-06	124
LIVER	1.0906E-05	1.2E-05	-9
MUSCLE	9.0956E-07	7.7E-07	18
OVARIES	5.2836E-06	2.3E-06	130
PANCREAS	9.1109E-07	7.7E-07	18
TESTES	5.3798E-06	2.4E-06	124
THYROID	9.0924E-07	7.7E-07	18
R.B.M.	4.9080E-05	2.2E-05	123
BONE SURFACE	6.9229E-04	2.8E-04	147
STOMACH	9.0970E-07	7.7E-07	18
S.I.	9.1212E-07	7.8E-07	17
U.L.I.	9.2468E-07	1.1E-06	-16
L.L.I.	9.7087E-07	1.7E-06	-43
SKIN	9.0809E-07	7.7E-07	18
SPLEEN	9.0966E-07	7.7E-07	18
THYMUS	9.0975E-07	7.7E-07	18
UTERUS	9.0929E-07	7.7E-07	18
ET	6.0877E-05	5.8E-05	5
LUNG	1.3418E-04	1.3E-04	3
COLON	9.4465E-07	1.4E-06	-30
ET1	7.5537E-04	7.6E-04	-1
ET2	6.0238E-05	5.7E-05	6
LN(ET)	3.4477E-06	3.2E-06	8
BBsec	3.8596E-04	3.6E-04	7
BBbas	1.2657E-04	1.2E-04	5
bb	1.0342E-04	9.8E-05	6
AI	4.3222E-05	4.2E-05	3
LN(TH)	1.3640E-05	1.3E-05	5
ESOPHAGUS	9.0975E-07	7.7E-07	18
REMAINDER	**1.0946E-06**	**8.7E-07**	**26**
C.E.D.	**3.1003E-05**	**2.2E-05**	**41**
Maximum			**147**

C.10.93.2. Acute Inhalation (Type S: f_1 = 0.0002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.3804E-08	3.7E-08	18
URIN BLADDER	3.9871E-08	3.4E-08	17
BRAIN	4.0128E-08	3.4E-08	18
BREAST	4.3774E-08	3.7E-08	18
GALL BLADDER	4.1228E-08	N/A	N/A
HEART	4.6636E-08	N/A	N/A
KIDNEYS	7.1698E-07	3.2E-07	124
LIVER	4.7876E-07	5.1E-07	-6
MUSCLE	4.1413E-08	3.5E-08	18
OVARIES	2.3066E-07	1.0E-07	131
PANCREAS	4.2576E-08	3.6E-08	18
TESTES	2.3455E-07	1.0E-07	135
THYROID	4.1410E-08	3.5E-08	18
R.B.M.	2.1417E-06	9.4E-07	128
BONE SURFACE	3.0175E-05	1.2E-05	151
STOMACH	4.2706E-08	3.6E-08	19
S.I.	4.2636E-08	3.7E-08	15
U.L.I.	5.7979E-08	6.5E-08	-11
L.L.I.	1.0947E-07	1.4E-07	-22
SKIN	4.0615E-08	3.4E-08	19
SPLEEN	4.2568E-08	3.6E-08	18
THYMUS	4.4515E-08	3.8E-08	17
UTERUS	4.0007E-08	3.4E-08	18
ET	2.2505E-04	2.1E-04	7
LUNG	2.1925E-04	2.1E-04	4
COLON	8.0246E-08	9.7E-08	-18
ET1	7.5450E-04	7.6E-04	-1
ET2	2.2469E-04	2.1E-04	7
LN(ET)	5.1691E-05	5.0E-05	3
BBsec	5.1014E-04	4.8E-04	6
BBbas	1.7187E-04	1.6E-04	7
bb	1.5424E-04	1.5E-04	3
AI	1.6274E-04	1.6E-04	2
LN(TH)	1.4584E-04	1.4E-04	4
ESOPHAGUS	4.4515E-08	3.8E-08	17
REMAINDER	**1.1255E-04**	**1.5E-07**	**74933**
C.E.D.	**3.2591E-05**	**2.5E-05**	**30**
Maximum			**74933**

C.10.93.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.9426E-09	7.1E-09	12
URIN BLADDER	7.9611E-09	7.2E-09	11
BRAIN	7.9047E-09	7.1E-09	11
BREAST	7.8889E-09	7.1E-09	11
GALL BLADDER	7.9372E-09	N/A	N/A
HEART	7.9035E-09	N/A	N/A
KIDNEYS	1.4201E-07	6.5E-08	118
LIVER	9.5070E-08	1.0E-07	-5
MUSCLE	7.9214E-09	7.1E-09	12
OVARIES	4.6284E-08	2.1E-08	120
PANCREAS	7.9237E-09	7.1E-09	12
TESTES	4.6942E-08	2.1E-08	124
THYROID	7.8969E-09	7.1E-09	11
R.B.M.	4.2796E-07	2.0E-07	114
BONE SURFACE	6.0376E-06	2.5E-06	142
STOMACH	9.2248E-09	8.4E-09	10
S.I.	1.1663E-08	1.1E-08	6
U.L.I.	3.8186E-08	4.0E-08	-5
L.L.I.	1.3856E-07	1.5E-07	-8
SKIN	7.8967E-09	7.1E-09	11
SPLEEN	7.9112E-09	7.1E-09	11
THYMUS	7.8953E-09	7.1E-09	11
UTERUS	7.9789E-09	7.2E-09	11
ET	7.8969E-09	7.1E-09	11
LUNG	7.9038E-09	7.1E-09	11
COLON	8.1590E-08	8.8E-08	-7
ET1	7.8969E-09	7.1E-09	11
ET2	7.8969E-09	7.1E-09	11
LN(ET)	7.8969E-09	7.1E-09	11
BBsec	7.9038E-09	7.1E-09	11
BBbas	7.9038E-09	7.1E-09	11
bb	7.9038E-09	7.1E-09	11
AI	7.9038E-09	7.1E-09	11
LN(TH)	7.9038E-09	7.1E-09	11
ESOPHAGUS	7.8953E-09	7.1E-09	11
REMAINDER	**9.3500E-09**	**7.8E-09**	**20**
C.E.D.	**1.3985E-07**	**7.2E-08**	**94**
Maximum			**142**

C.10.93.4. Acute Ingestion (f_1 = 0.0002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.1818E-09	3.1E-09	3
URIN BLADDER	3.2264E-09	3.2E-09	1
BRAIN	3.1620E-09	3.1E-09	2
BREAST	3.1568E-09	3.1E-09	2
GALL BLADDER	3.1930E-09	N/A	N/A
HEART	3.1636E-09	N/A	N/A
KIDNEYS	5.6814E-08	2.7E-08	110
LIVER	3.8034E-08	4.3E-08	-12
MUSCLE	3.1820E-09	3.1E-09	3
OVARIES	1.8637E-08	8.8E-09	112
PANCREAS	3.1777E-09	3.1E-09	3
TESTES	1.8792E-08	8.7E-09	116
THYROID	3.1591E-09	3.1E-09	2
R.B.M.	1.7121E-07	8.2E-08	109
BONE SURFACE	2.4151E-06	1.0E-06	142
STOMACH	4.4889E-09	4.4E-09	2
S.I.	6.9195E-09	6.7E-09	3
U.L.I.	3.3453E-08	3.4E-08	-2
L.L.I.	1.3385E-07	1.4E-07	-4
SKIN	3.1638E-09	3.1E-09	2
SPLEEN	3.1728E-09	3.1E-09	2
THYMUS	3.1591E-09	3.1E-09	2
UTERUS	3.2391E-09	3.2E-09	1
ET	3.1591E-09	3.1E-09	2
LUNG	3.1631E-09	3.1E-09	2
COLON	7.6868E-08	8.0E-08	-4
ET1	3.1591E-09	3.1E-09	2
ET2	3.1591E-09	3.1E-09	2
LN(ET)	3.1591E-09	3.1E-09	2
BBsec	3.1631E-09	3.1E-09	2
BBbas	3.1631E-09	3.1E-09	2
bb	3.1631E-09	3.1E-09	2
AI	3.1631E-09	3.1E-09	2
LN(TH)	3.1631E-09	3.1E-09	2
ESOPHAGUS	3.1591E-09	3.1E-09	2
REMAINDER	**3.7994E-09**	**3.4E-09**	**12**
C.E.D.	**6.1355E-08**	**3.5E-08**	**75**
Maximum			**142**

C.10.94. ^{230}Th – Thorium-230 (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: **+4.8%** (Ingestion – f_1 = 0.0005).
Maximum difference in ***Organ Dose***: **+6.4%** (Inhalation – type "S" – Various Soft Tissues).
Maximum difference excluding ***Respiratory Tract***: **+6.4%**.

C.10.94.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.7302E-06	1.636E-06	5.76
URIN BLADDER	1.7295E-06	1.636E-06	5.72
BRAIN	1.7300E-06	1.636E-06	5.75
BREAST	1.7293E-06	1.636E-06	5.70
GALL BLADDER	1.7296E-06	N/A	N/A
HEART	1.7296E-06	N/A	N/A
KIDNEYS	2.3390E-05	2.240E-05	4.42
LIVER	2.0183E-05	1.923E-05	4.96
MUSCLE	1.7297E-06	1.636E-06	5.73
OVARIES	1.2575E-05	1.195E-05	5.23
PANCREAS	1.7297E-06	1.636E-06	5.73
TESTES	1.2811E-05	1.218E-05	5.18
THYROID	1.7296E-06	1.636E-06	5.72
R.B.M.	5.3905E-05	5.182E-05	4.02
BONE SURFACE	1.5853E-03	1.505E-03	5.34
STOMACH	1.7299E-06	1.636E-06	5.74
S.I.	1.7308E-06	1.637E-06	5.73
U.L.I.	1.7366E-06	1.643E-06	5.70
L.L.I.	1.7503E-06	1.657E-06	5.63
SKIN	1.7294E-06	1.636E-06	5.71
SPLEEN	1.7295E-06	1.641E-06	5.39
THYMUS	1.7295E-06	1.636E-06	5.72
UTERUS	1.7295E-06	1.636E-06	5.72
ET	1.3931E-05	1.384E-05	0.66
LUNG	1.7370E-05	1.730E-05	0.40
COLON	1.7425E-06	1.649E-06	5.67
ET1	1.7612E-06	1.667E-06	5.65
ET2	1.3955E-05	1.387E-05	0.61
LN(ET)	2.2466E-06	2.153E-06	4.35
BBsec	3.7259E-05	3.724E-05	0.05
BBbas	4.3739E-06	4.286E-06	2.05
bb	2.2199E-05	2.206E-05	0.63
AI	9.1334E-06	9.041E-06	1.02
LN(TH)	4.1390E-06	4.046E-06	2.30
ESOPHAGUS	1.7295E-06	1.636E-06	5.72
REMAINDER	**1.9540E-06**	**1.851E-06**	**5.56**
C.E.D.	**2.8855E-05**	**2.757E-05**	**4.66**
Maximum			**5.76**

C.10.94.2. Acute Inhalation (Type S: f_1 = 0.0002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.5632E-07	1.469E-07	6.41
URIN BLADDER	1.5620E-07	1.469E-07	6.33
BRAIN	1.5625E-07	1.469E-07	6.36
BREAST	1.5624E-07	1.469E-07	6.36
GALL BLADDER	1.5623E-07	N/A	N/A
HEART	1.5630E-07	N/A	N/A
KIDNEYS	2.2317E-06	2.119E-06	5.32
LIVER	1.8924E-06	1.789E-06	5.78
MUSCLE	1.5624E-07	1.469E-07	6.36
OVARIES	1.1696E-06	1.104E-06	5.94
PANCREAS	1.5626E-07	1.469E-07	6.37
TESTES	1.1916E-06	1.124E-06	6.01
THYROID	1.5624E-07	1.469E-07	6.36
R.B.M.	5.1914E-06	4.946E-06	4.96
BONE SURFACE	1.4599E-04	1.376E-04	6.10
STOMACH	1.5674E-07	1.474E-07	6.34
S.I.	1.5752E-07	1.482E-07	6.29
U.L.I.	1.6408E-07	1.547E-07	6.06
L.L.I.	1.7930E-07	1.699E-07	5.53
SKIN	1.5621E-07	1.469E-07	6.34
SPLEEN	1.5624E-07	1.475E-07	5.93
THYMUS	1.5626E-07	1.469E-07	6.37
UTERUS	1.5620E-07	1.469E-07	6.33
ET	7.4455E-05	7.447E-05	-0.02
LUNG	4.0103E-05	4.012E-05	-0.04
COLON	1.7066E-07	1.613E-07	5.80
ET1	1.8903E-07	1.797E-07	5.19
ET2	7.4469E-05	7.448E-05	-0.01
LN(ET)	1.3448E-04	1.345E-04	-0.01
BBsec	4.6429E-05	4.652E-05	-0.20
BBbas	4.5190E-06	4.519E-06	0.00
bb	2.9625E-05	2.955E-05	0.25
AI	6.3927E-05	6.393E-05	0.00
LN(TH)	4.6684E-04	4.670E-04	-0.03
ESOPHAGUS	1.5626E-07	1.469E-07	6.37
REMAINDER	**2.1342E-07**	**2.031E-07**	**5.08**
C.E.D.	**7.3109E-06**	**7.177E-06**	**1.87**
Maximum			**6.41**

C.10.94.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.4106E-08	1.334E-08	5.74
URIN BLADDER	1.4100E-08	1.334E-08	5.70
BRAIN	1.4104E-08	1.334E-08	5.73
BREAST	1.4099E-08	1.334E-08	5.69
GALL BLADDER	1.4101E-08	N/A	N/A
HEART	1.4100E-08	N/A	N/A
KIDNEYS	1.9028E-07	1.823E-07	4.38
LIVER	1.6427E-07	1.566E-07	4.90
MUSCLE	1.4101E-08	1.334E-08	5.70
OVARIES	1.0237E-07	9.733E-08	5.18
PANCREAS	1.4102E-08	1.334E-08	5.71
TESTES	1.0429E-07	9.916E-08	5.17
THYROID	1.4101E-08	1.334E-08	5.70
R.B.M.	4.3847E-07	4.216E-07	4.00
BONE SURFACE	1.2911E-05	1.226E-05	5.31
STOMACH	1.5193E-08	1.443E-08	5.29
S.I.	1.6835E-08	1.607E-08	4.76
U.L.I.	3.0646E-08	2.989E-08	2.53
L.L.I.	6.2642E-08	6.188E-08	1.23
SKIN	1.4100E-08	1.334E-08	5.70
SPLEEN	1.4100E-08	1.338E-08	5.38
THYMUS	1.4100E-08	1.334E-08	5.70

UTERUS	1.4100E-08	1.334E-08	5.70
ET	1.4101E-08	1.334E-08	5.70
LUNG	1.4101E-08	1.335E-08	5.63
COLON	4.4482E-08	4.371E-08	1.77
ET1	1.4101E-08	1.334E-08	5.70
ET2	1.4101E-08	1.334E-08	5.70
LN(ET)	1.4101E-08	1.334E-08	5.70
BBsec	1.4101E-08	1.334E-08	5.70
BBbas	1.4101E-08	1.334E-08	5.70
bb	1.4101E-08	1.334E-08	5.70
AI	1.4101E-08	1.334E-08	5.70
LN(TH)	1.4101E-08	1.334E-08	5.70
ESOPHAGUS	1.4100E-08	1.334E-08	5.70
REMAINDER	**1.5934E-08**	**1.510E-08**	**5.52**
C.E.D.	**2.2341E-07**	**2.130E-07**	**4.89**
Maximum			**5.74**

C.10.94.4 Acute Ingestion (f_1 = 0.0002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.6422E-09	5.336E-09	0.02
URIN BLADDER	5.6399E-09	5.336E-09	0.02
BRAIN	5.6414E-09	5.336E-09	0.02
BREAST	5.6394E-09	5.336E-09	0.02
GALL BLADDER	5.6405E-09	N/A	N/A
HEART	5.6401E-09	N/A	N/A
KIDNEYS	7.6114E-08	7.291E-08	4.39
LIVER	6.5707E-08	6.262E-08	4.93
MUSCLE	5.6405E-09	5.336E-09	5.71
OVARIES	4.0949E-08	3.893E-08	5.19
PANCREAS	5.6407E-09	5.336E-09	5.71
TESTES	4.1717E-08	3.966E-08	5.19
THYROID	5.6403E-09	5.336E-09	5.70
R.B.M.	1.7539E-07	1.686E-07	4.03
BONE SURFACE	5.1643E-06	4.903E-06	5.33
STOMACH	6.7336E-09	6.430E-09	4.72
S.I.	8.3749E-09	8.070E-09	3.78
U.L.I.	2.2190E-08	2.189E-08	1.37
L.L.I.	5.4194E-08	5.389E-08	0.56
SKIN	5.6397E-09	5.336E-09	5.69
SPLEEN	5.6400E-09	5.351E-09	5.40
THYMUS	5.6398E-09	5.336E-09	5.69
UTERUS	5.6402E-09	5.336E-09	5.70
ET	5.6403E-09	5.336E-09	5.70
LUNG	5.6403E-09	5.341E-09	5.60
COLON	3.6030E-08	3.571E-08	0.90
ET1	5.6403E-09	5.336E-09	5.70
ET2	5.6403E-09	5.336E-09	5.70
LN(ET)	5.6403E-09	5.336E-09	5.70
BBsec	5.6403E-09	5.336E-09	5.70
BBbas	5.6403E-09	5.336E-09	5.70
bb	5.6403E-09	5.336E-09	5.70
AI	5.6403E-09	5.336E-09	5.70
LN(TH)	5.6403E-09	5.336E-09	5.70
ESOPHAGUS	5.6398E-09	5.336E-09	5.69
REMAINDER	**6.4077E-09**	**6.074E-09**	**5.49**
C.E.D.	**9.1632E-08**	**8.745E-08**	**4.78**
Maximum			**5.71**

C.10.95. ^{232}Th – Thorium-232 (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: **+436%** (Ingestion – f_1 = 0.0005).
Maximum difference in ***Organ Dose***: **+529%** (Inhalation – type "S" – Bone Surface).
Maximum difference excluding ***Respiratory Tract***: **+529%**.

C.10.95.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.8023E-06	4.4E-06	122.8
URIN BLADDER	9.7150E-06	4.4E-06	120.8
BRAIN	9.7719E-06	4.4E-06	122.1
BREAST	9.7105E-06	4.4E-06	120.7
GALL BLADDER	9.7424E-06	N/A	N/A
HEART	9.7355E-06	N/A	N/A
KIDNEYS	1.1872E-04	2.3E-05	416.2
LIVER	1.0913E-04	2.3E-05	374.5
MUSCLE	9.7434E-06	4.4E-06	121.4
OVARIES	7.0256E-05	1.3E-05	440.4
PANCREAS	9.7523E-06	4.4E-06	121.6
TESTES	7.1543E-05	1.3E-05	450.3
THYROID	9.7412E-06	4.4E-06	121.4
R.B.M.	2.5547E-04	5.7E-05	348.2
BONE SURFACE	8.8839E-03	1.5E-03	492.3
STOMACH	9.7199E-06	4.4E-06	120.9
S.I.	9.7437E-06	4.4E-06	121.4
U.L.I.	9.7425E-06	4.5E-06	116.5
L.L.I.	9.7727E-06	4.6E-06	112.5
SKIN	9.7215E-06	4.4E-06	120.9
SPLEEN	9.7295E-06	4.4E-06	121.1
THYMUS	9.7250E-06	4.4E-06	121.0
UTERUS	9.7293E-06	4.4E-06	121.1
ET	2.0137E-05	1.5E-05	34.2
LUNG	2.1140E-05	1.6E-05	32.1
COLON	9.7555E-06	4.5E-06	114.7
ET1	9.7477E-06	4.4E-06	121.5
ET2	2.0158E-05	1.5E-05	34.4
LN(ET)	1.0268E-05	4.9E-06	109.6
BBsec	2.9746E-05	2.4E-05	23.9
BBbas	1.1221E-05	5.8E-06	93.5
bb	2.6544E-05	2.1E-05	26.4
AI	1.6422E-05	1.1E-05	49.3
LN(TH)	1.2066E-05	6.7E-06	80.1
ESOPHAGUS	9.7250E-06	4.4E-06	121.0
REMAINDER	**1.0848E-05**	**4.6E-06**	**135.8**
C.E.D.	**1.4672E-04**	**2.9E-05**	**405.9**
Maximum			**492.3**

C.10.95.2. Acute Inhalation (Type S: f_1 = 0.0002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.5609E-07	4.10E-07	133.2
URIN BLADDER	9.4084E-07	4.00E-07	135.2
BRAIN	9.4680E-07	4.00E-07	136.7
BREAST	9.4735E-07	4.10E-07	131.1
GALL BLADDER	9.4589E-07	N/A	N/A
HEART	9.5470E-07	N/A	N/A
KIDNEYS	1.2732E-05	2.40E-06	430.5
LIVER	1.1196E-05	2.50E-06	347.8
MUSCLE	9.4639E-07	4.10E-07	130.8
OVARIES	7.0609E-06	1.30E-06	443.1
PANCREAS	9.4920E-07	4.10E-07	131.5
TESTES	7.1900E-06	1.30E-06	453.1
THYROID	9.4616E-07	4.10E-07	130.8
R.B.M.	2.8454E-05	6.10E-06	366.5
BONE SURFACE	8.8022E-04	1.40E-04	528.7
STOMACH	9.4518E-07	4.10E-07	130.5
S.I.	9.4544E-07	4.10E-07	130.6
U.L.I.	9.5105E-07	4.30E-07	121.2
L.L.I.	9.6658E-07	4.80E-07	101.4
SKIN	9.4282E-07	4.00E-07	135.7
SPLEEN	9.4697E-07	4.10E-07	131.0
THYMUS	9.5012E-07	4.10E-07	131.7
UTERUS	9.4246E-07	4.00E-07	135.6
ET	1.0829E-04	1.10E-04	-1.6
LUNG	7.9328E-05	7.70E-05	3.0
COLON	9.5777E-07	4.52E-07	112.1
ET1	1.0152E-06	4.70E-07	116.0
ET2	1.0778E-04	1.10E-04	-2.0
LN(ET)	7.2848E-04	7.10E-04	2.6
BBsec	2.8262E-05	2.80E-05	0.9
BBbas	3.8588E-06	3.30E-06	16.9
bb	4.2184E-05	4.10E-05	2.9
AI	1.7191E-04	1.70E-04	1.1
LN(TH)	2.6876E-03	2.60E-03	3.4
ESOPHAGUS	9.5012E-07	4.10E-07	131.7
REMAINDER	**1.1175E-06**	**4.80E-07**	**132.8**
C.E.D.	**2.4217E-05**	**1.20E-05**	**101.8**
Maximum			**528.7**

C.10.95.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.9575E-08	3.60E-08	121.0
URIN BLADDER	7.8869E-08	3.60E-08	119.1
BRAIN	7.9331E-08	3.60E-08	120.4
BREAST	7.8832E-08	3.60E-08	119.0
GALL BLADDER	7.9090E-08	N/A	N/A
HEART	7.9034E-08	N/A	N/A
KIDNEYS	9.5880E-07	1.80E-07	432.7
LIVER	8.8309E-07	1.90E-07	364.8
MUSCLE	7.9099E-08	3.60E-08	119.7
OVARIES	5.6895E-07	1.10E-07	417.2
PANCREAS	7.9170E-08	3.60E-08	119.9
TESTES	5.7937E-07	1.10E-07	426.7
THYROID	7.9082E-08	3.60E-08	119.7
R.B.M.	2.0600E-06	4.70E-07	338.3
BONE SURFACE	7.2001E-05	1.20E-05	500.0
STOMACH	7.9841E-08	3.60E-08	121.8
S.I.	8.1431E-08	3.80E-08	114.3
U.L.I.	9.3196E-08	5.00E-08	86.4
L.L.I.	1.2072E-07	7.90E-08	52.8
SKIN	7.8922E-08	3.60E-08	119.2
SPLEEN	7.8986E-08	3.60E-08	119.4
THYMUS	7.8949E-08	3.60E-08	119.3
UTERUS	7.8984E-08	3.60E-08	119.4
ET	7.9082E-08	3.60E-08	119.7
LUNG	7.9088E-08	3.60E-08	119.7
COLON	1.0510E-07	6.25E-08	68.1
ET1	7.9082E-08	3.60E-08	119.7
ET2	7.9082E-08	3.60E-08	119.7
LN(ET)	7.9082E-08	3.60E-08	119.7
BBsec	7.9088E-08	3.60E-08	119.7
BBbas	7.9088E-08	3.60E-08	119.7
bb	7.9088E-08	3.60E-08	119.7
AI	7.9088E-08	3.60E-08	119.7
LN(TH)	7.9088E-08	3.60E-08	119.7
ESOPHAGUS	7.8949E-08	3.60E-08	119.3
REMAINDER	**8.8023E-08**	**3.70E-08**	**137.9**
C.E.D.	**1.1799E-06**	**2.20E-07**	**436.3**
Maximum			**500.0**

C.10.95.4. Acute Ingestion (f_1 = 0.0002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.1830E-08	1.4E-08	127.4
URIN BLADDER	3.1548E-08	1.4E-08	125.3
BRAIN	3.1732E-08	1.4E-08	126.7
BREAST	3.1533E-08	1.4E-08	125.2
GALL BLADDER	3.1636E-08	N/A	N/A
HEART	3.1614E-08	N/A	N/A
KIDNEYS	3.8351E-07	7.4E-08	418.3
LIVER	3.5324E-07	7.4E-08	377.4
MUSCLE	3.1640E-08	1.4E-08	126.0
OVARIES	2.2758E-07	4.3E-08	429.3
PANCREAS	3.1668E-08	1.4E-08	126.2
TESTES	2.3175E-07	4.4E-08	426.7
THYROID	3.1633E-08	1.4E-08	126.0
R.B.M.	8.2401E-07	1.9E-07	333.7
BONE SURFACE	2.8801E-05	4.7E-06	512.8
STOMACH	3.2498E-08	1.5E-08	116.7
S.I.	3.3976E-08	1.7E-08	99.9
U.L.I.	4.5775E-08	2.9E-08	57.8
L.L.I.	7.3218E-08	5.7E-08	28.5
SKIN	3.1569E-08	1.4E-08	125.5
SPLEEN	3.1594E-08	1.4E-08	125.7
THYMUS	3.1580E-08	1.4E-08	125.6
UTERUS	3.1594E-08	1.4E-08	125.7
ET	3.1633E-08	1.4E-08	126.0
LUNG	3.1635E-08	1.4E-08	126.0
COLON	5.7642E-08	4.1E-08	40.2
ET1	3.1633E-08	1.4E-08	126.0
ET2	3.1633E-08	1.4E-08	126.0
LN(ET)	3.1633E-08	1.4E-08	126.0
BBsec	3.1635E-08	1.4E-08	126.0
BBbas	3.1635E-08	1.4E-08	126.0
bb	3.1635E-08	1.4E-08	126.0
AI	3.1635E-08	1.4E-08	126.0
LN(TH)	3.1635E-08	1.4E-08	126.0
ESOPHAGUS	3.1580E-08	1.4E-08	125.6
REMAINDER	**3.5239E-08**	**1.5E-08**	**134.9**
C.E.D.	**4.7391E-07**	**9.2E-08**	**415.1**
Maximum			**512.8**

C.10.96. ^{234}Th – Thorium-234 (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: **-0.18%** (Inhalation – Type "S").
Maximum difference in ***Organ Dose***: **+69.37%** (Inhalation – Type "S" – Bone Surface).
Maximum difference excluding ***Respiratory Tract***: **+69.37%**

C.10.96.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.35E-11	5.31E-11	0.81
URIN BLADDER	6.01E-11	5.97E-11	0.71
BRAIN	4.69E-11	4.64E-11	0.93
BREAST	5.08E-11	5.04E-11	0.84
GALL BLADDER	5.14E-11	N/A	N/A
HEART	5.62E-11	N/A	N/A
KIDNEYS	1.11E-09	1.10E-09	0.45
LIVER	4.08E-10	4.03E-10	1.24
MUSCLE	5.00E-11	4.96E-11	0.85
OVARIES	1.63E-10	1.60E-10	1.64
PANCREAS	5.16E-11	5.12E-11	0.83
TESTES	1.53E-10	1.50E-10	1.78
THYROID	4.83E-11	4.79E-11	0.89
R.B.M.	1.73E-09	1.71E-09	0.77
BONE SURFACE	3.48E-09	3.07E-09	13.27
STOMACH	4.61E-10	4.61E-10	0.09
S.I.	1.08E-09	1.08E-09	0.06
U.L.I.	6.16E-09	6.16E-09	0.00
L.L.I.	1.75E-08	1.75E-08	-0.02
SKIN	4.67E-11	4.63E-11	0.92
SPLEEN	5.07E-11	5.03E-11	0.85
THYMUS	5.30E-11	5.25E-11	0.81
UTERUS	5.12E-11	5.07E-11	0.83
ET	5.80E-09	5.80E-09	0.00
LUNG	2.96E-08	2.97E-08	-0.29
COLON	1.11E-08	1.11E-08	0.05
ET1	2.36E-06	2.36E-06	0.03
ET2	3.45E-09	3.45E-09	0.00
LN(ET)	5.59E-10	5.58E-10	0.08
BBsec	6.11E-08	6.12E-08	-0.18
BBbas	4.85E-08	4.86E-08	-0.19
bb	2.04E-08	2.03E-08	0.09
AI	1.38E-08	1.38E-08	-0.01
LN(TH)	6.29E-10	6.28E-10	0.02
ESOPHAGUS	5.30E-11	5.25E-11	0.81
REMAINDER	**8.48E-11**	**8.43E-11**	**0.53**
C.E.D.	**5.25E-09**	**5.25E-09**	**-0.05**
Maximum			**13.27**

C.10.96.2. Acute Inhalation (Type S: f_1 = 0.0002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.09E-12	8.05E-12	0.47
URIN BLADDER	4.87E-12	4.83E-12	0.79
BRAIN	1.83E-12	1.79E-12	2.15
BREAST	8.02E-12	7.98E-12	0.46
GALL BLADDER	6.40E-12	N/A	N/A
HEART	1.39E-11	N/A	N/A
KIDNEYS	2.11E-11	2.06E-11	2.66
LIVER	1.36E-11	1.31E-11	3.72
MUSCLE	5.78E-12	5.75E-12	0.66
OVARIES	1.59E-11	1.56E-11	1.90
PANCREAS	7.02E-12	6.99E-12	0.54
TESTES	3.72E-12	3.42E-12	8.77
THYROID	4.08E-12	4.04E-12	0.95
R.B.M.	3.35E-11	3.22E-11	4.17
BONE SURFACE	9.14E-11	5.40E-11	69.37
STOMACH	4.42E-10	4.42E-10	0.00
S.I.	1.10E-09	1.10E-09	0.01
U.L.I.	6.48E-09	6.48E-09	-0.01
L.L.I.	1.85E-08	1.85E-08	0.01
SKIN	2.79E-12	2.75E-12	1.40
SPLEEN	6.70E-12	6.67E-12	0.56
THYMUS	1.01E-11	1.00E-11	0.34
UTERUS	6.41E-12	6.37E-12	0.61
ET	6.47E-09	6.47E-09	-0.01
LUNG	3.65E-08	3.66E-08	-0.28
COLON	1.17E-08	1.17E-08	0.03
ET1	2.36E-06	2.36E-06	0.03
ET2	4.12E-09	4.12E-09	-0.03
LN(ET)	6.16E-10	6.16E-10	0.07
BBsec	7.40E-08	7.42E-08	-0.18
BBbas	5.90E-08	5.91E-08	-0.18
bb	2.54E-08	2.53E-08	0.09
AI	1.76E-08	1.76E-08	-0.05
LN(TH)	9.67E-10	9.66E-10	0.11
ESOPHAGUS	1.01E-11	1.00E-11	0.34
REMAINDER	**3.16E-11**	**3.16E-11**	**0.10**
C.E.D.	**5.84E-09**	**5.85E-09**	**-0.18**
Maximum			**69.37**

C.10.96.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.13E-12	2.13E-12	0.18
URIN BLADDER	9.77E-12	9.77E-12	0.03
BRAIN	6.50E-13	6.47E-13	0.53
BREAST	8.87E-13	8.84E-13	0.39
GALL BLADDER	8.66E-12	N/A	N/A
HEART	1.25E-12	N/A	N/A
KIDNEYS	1.89E-11	1.89E-11	0.15
LIVER	7.94E-12	7.90E-12	0.51
MUSCLE	3.83E-12	3.83E-12	0.09
OVARIES	3.24E-11	3.23E-11	0.06
PANCREAS	3.76E-12	3.76E-12	0.09
TESTES	4.62E-12	4.60E-12	0.39
THYROID	6.82E-13	6.79E-13	0.50
R.B.M.	2.90E-11	2.89E-11	0.39
BONE SURFACE	5.00E-11	4.67E-11	7.07
STOMACH	9.95E-10	9.95E-10	0.00
S.I.	2.55E-09	2.55E-09	0.02
U.L.I.	1.51E-08	1.51E-08	0.01
L.L.I.	4.30E-08	4.30E-08	0.01
SKIN	1.68E-12	1.68E-12	0.20
SPLEEN	3.07E-12	3.07E-12	0.09
THYMUS	8.23E-13	8.19E-13	0.43

UTERUS	1.33E-11	1.33E-11	0.03
ET	6.82E-13	6.79E-13	0.50
LUNG	1.05E-12	1.05E-12	0.23
COLON	2.71E-08	2.71E-08	0.04
ET1	6.82E-13	6.79E-13	0.50
ET2	6.82E-13	6.79E-13	0.50
LN(ET)	6.82E-13	6.79E-13	0.50
BBsec	1.05E-12	1.05E-12	0.33
BBbas	1.05E-12	1.05E-12	0.33
bb	1.05E-12	1.05E-12	0.33
AI	1.05E-12	1.05E-12	0.33
LN(TH)	1.05E-12	1.05E-12	0.33
ESOPHAGUS	8.23E-13	8.19E-13	0.43
REMAINDER	**5.68E-11**	**5.68E-11**	**-0.05**
C.E.D.	**3.39E-09**	**3.39E-09**	**0.04**
Maximum			**7.07**

C.10.96.4. Acute Ingestion (f_1 = 0.0002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.73E-12	1.73E-12	0.08
URIN BLADDER	9.30E-12	9.30E-12	0.01
BRAIN	2.65E-13	2.64E-13	0.49
BREAST	5.08E-13	5.07E-13	0.27
GALL BLADDER	8.27E-12	N/A	N/A
HEART	8.63E-13	N/A	N/A
KIDNEYS	9.63E-12	9.62E-12	0.13
LIVER	4.56E-12	4.55E-12	0.36
MUSCLE	3.45E-12	3.45E-12	0.04
OVARIES	3.11E-11	3.11E-11	0.03
PANCREAS	3.37E-12	3.37E-12	0.03
TESTES	3.35E-12	3.34E-12	0.22
THYROID	2.99E-13	2.98E-13	0.43
R.B.M.	1.45E-11	1.45E-11	0.34
BONE SURFACE	2.22E-11	2.09E-11	6.31
STOMACH	9.95E-10	9.95E-10	0.00
S.I.	2.55E-09	2.55E-09	-0.01
U.L.I.	1.51E-08	1.51E-08	-0.03
L.L.I.	4.30E-08	4.30E-08	-0.01
SKIN	1.30E-12	1.30E-12	0.10
SPLEEN	2.69E-12	2.69E-12	0.05
THYMUS	4.41E-13	4.39E-13	0.30
UTERUS	1.29E-11	1.29E-11	0.02
ET	2.99E-13	2.98E-13	0.43
LUNG	6.63E-13	6.62E-13	0.10
COLON	2.71E-08	2.71E-08	0.06
ET1	2.99E-13	2.98E-13	0.43
ET2	2.99E-13	2.98E-13	0.43
LN(ET)	2.99E-13	2.98E-13	0.43
BBsec	6.63E-13	6.61E-13	0.20
BBbas	6.63E-13	6.61E-13	0.20
bb	6.63E-13	6.61E-13	0.20
AI	6.63E-13	6.61E-13	0.20
LN(TH)	6.63E-13	6.61E-13	0.20
ESOPHAGUS	4.41E-13	4.39E-13	0.30
REMAINDER	**5.63E-11**	**5.63E-11**	**-0.07**
C.E.D.	**3.39E-09**	**3.39E-09**	**0.05**
Maximum			**6.31**

C.10.97. ^{201}Tl – Thallium-201

Maximum difference in ***Effective Dose***: **+0.05%** (Ingestion – f_1 = 0.99).
Maximum difference in ***Organ Dose***: **+0.11%** (Ingestion – Skin).
Maximum difference excluding ***Respiratory Tract***: **+0.11%**.

C.10.97.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.24E-11	3.24E-11	0.05
URIN BLADDER	4.39E-11	4.39E-11	0.05
BRAIN	2.80E-11	2.80E-11	0.07
BREAST	2.29E-11	2.28E-11	0.07
GALL BLADDER	3.21E-11	N/A	N/A
HEART	2.80E-11	N/A	N/A
KIDNEYS	1.30E-10	1.30E-10	0.02
LIVER	2.98E-11	2.98E-11	0.08
MUSCLE	2.89E-11	2.89E-11	0.08
OVARIES	3.61E-11	3.61E-11	0.05
PANCREAS	3.33E-11	3.33E-11	0.05
TESTES	2.59E-11	2.59E-11	0.09
THYROID	3.01E-11	3.01E-11	0.08
R.B.M.	2.81E-11	2.81E-11	0.08
BONE SURFACE	5.38E-11	5.38E-11	0.03
STOMACH	4.15E-11	4.14E-11	0.06
S.I.	3.52E-11	3.52E-11	0.05
U.L.I.	7.71E-11	7.70E-11	0.02
L.L.I.	1.39E-10	1.39E-10	0.02
SKIN	2.23E-11	2.23E-11	0.09
SPLEEN	3.12E-11	3.11E-11	0.07
THYMUS	2.96E-11	2.96E-11	0.08
UTERUS	3.34E-11	3.33E-11	0.06
ET	1.38E-09	1.38E-09	0.03
LUNG	3.63E-11	3.63E-11	-0.09
COLON	1.04E-10	1.04E-10	0.02
ET1	3.27E-07	3.27E-07	0.00
ET2	1.05E-09	1.05E-09	0.01
LN(ET)	9.99E-10	9.98E-10	0.01
BBsec	5.01E-11	5.01E-11	-0.04
BBbas	4.08E-11	4.08E-11	-0.02
bb	3.32E-11	3.32E-11	0.08
AI	3.02E-11	3.02E-11	0.08
LN(TH)	2.99E-11	2.99E-11	0.07
ESOPHAGUS	2.96E-11	2.96E-11	0.08
REMAINDER	**7.05E-10**	**7.05E-10**	**0.02**
C.E.D.	**7.62E-11**	**7.62E-11**	**0.02**
Maximum			**-0.09**

C.10.97.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.69E-11	6.68E-11	0.07
URIN BLADDER	9.05E-11	9.05E-11	0.05
BRAIN	5.34E-11	5.33E-11	0.10
BREAST	4.62E-11	4.62E-11	0.11

GALL BLADDER	6.66E-11	N/A	N/A
HEART	5.66E-11	N/A	N/A
KIDNEYS	2.68E-10	2.68E-10	0.00
LIVER	6.14E-11	6.14E-11	0.08
MUSCLE	5.49E-11	5.49E-11	0.09
OVARIES	7.50E-11	7.49E-11	0.06
PANCREAS	7.06E-11	7.05E-11	0.06
TESTES	5.33E-11	5.33E-11	0.08
THYROID	5.76E-11	5.75E-11	0.08
R.B.M.	5.53E-11	5.52E-11	0.08
BONE SURFACE	1.01E-10	1.01E-10	0.08
STOMACH	1.23E-10	1.23E-10	0.03
S.I.	7.41E-11	7.41E-11	0.07
U.L.I.	1.64E-10	1.64E-10	0.02
L.L.I.	2.97E-10	2.97E-10	0.01
SKIN	4.44E-11	4.44E-11	0.11
SPLEEN	6.52E-11	6.52E-11	0.06
THYMUS	5.54E-11	5.54E-11	0.08
UTERUS	6.90E-11	6.89E-11	0.06
ET	5.76E-11	5.75E-11	0.08
LUNG	5.83E-11	5.83E-11	-0.03
COLON	2.21E-10	2.21E-10	0.05
ET1	5.76E-11	5.75E-11	0.08
ET2	5.76E-11	5.75E-11	0.08
LN(ET)	5.76E-11	5.75E-11	0.08
BBsec	5.83E-11	5.83E-11	0.07
BBbas	5.83E-11	5.83E-11	0.07
bb	5.83E-11	5.83E-11	0.07
AI	5.83E-11	5.83E-11	0.07
LN(TH)	5.83E-11	5.83E-11	0.07
ESOPHAGUS	5.54E-11	5.54E-11	0.08
REMAINDER	**1.61E-10**	**1.61E-10**	**0.03**
C.E.D.	**9.50E-11**	**9.50E-11**	**0.05**
Maximum			**0.11**

C.10.98. ^{202}Tl – Thallium-202

Maximum difference in ***Effective Dose***: +**0.02%** (Inhalation/Ingestion – f_1 = 0.99).
Maximum difference in ***Organ Dose***: **-0.08%** (Inhalation – Lungs).
Maximum difference excluding ***Respiratory Tract***: **0.05%**.

C.10.98.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.03E-10	2.03E-10	0.02
URIN BLADDER	2.23E-10	2.23E-10	0.01
BRAIN	1.43E-10	1.43E-10	0.05
BREAST	1.13E-10	1.13E-10	0.03
GALL BLADDER	2.04E-10	N/A	N/A
HEART	1.59E-10	N/A	N/A
KIDNEYS	4.37E-10	4.37E-10	0.01
LIVER	1.81E-10	1.81E-10	0.01
MUSCLE	1.63E-10	1.63E-10	0.03
OVARIES	2.50E-10	2.50E-10	0.02
PANCREAS	2.09E-10	2.09E-10	0.01
TESTES	1.49E-10	1.49E-10	0.03
THYROID	1.71E-10	1.71E-10	0.02
R.B.M.	1.79E-10	1.79E-10	0.03
BONE SURFACE	2.29E-10	2.29E-10	0.03
STOMACH	1.88E-10	1.88E-10	0.02
S.I.	2.35E-10	2.35E-10	0.00
U.L.I.	3.08E-10	3.08E-10	-0.01
L.L.I.	4.83E-10	4.83E-10	-0.01
SKIN	1.08E-10	1.08E-10	0.01
SPLEEN	1.91E-10	1.91E-10	-0.01
THYMUS	1.65E-10	1.65E-10	0.01
UTERUS	2.19E-10	2.19E-10	0.01
ET	4.04E-09	4.04E-09	0.00
LUNG	1.60E-10	1.60E-10	-0.08
COLON	3.84E-10	3.84E-10	0.03
ET1	7.68E-08	7.68E-08	0.01
ET2	3.97E-09	3.97E-09	0.01
LN(ET)	3.96E-09	3.96E-09	-0.01
BBsec	1.62E-10	1.62E-10	0.01
BBbas	1.61E-10	1.61E-10	-0.01
bb	1.59E-10	1.59E-10	0.04
AI	1.59E-10	1.59E-10	-0.01
LN(TH)	1.59E-10	1.59E-10	0.02
ESOPHAGUS	1.65E-10	1.65E-10	0.01
REMAINDER	**2.11E-09**	**2.11E-09**	**0.00**
C.E.D.	**3.11E-10**	**3.11E-10**	**0.02**
Maximum			**-0.08**

C.10.98.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.19E-10	4.19E-10	0.01
URIN BLADDER	4.61E-10	4.61E-10	0.02
BRAIN	2.65E-10	2.65E-10	0.03
BREAST	2.26E-10	2.26E-10	0.03
GALL BLADDER	4.22E-10	N/A	N/A
HEART	3.20E-10	N/A	N/A
KIDNEYS	9.04E-10	9.04E-10	0.01
LIVER	3.71E-10	3.71E-10	0.03
MUSCLE	3.14E-10	3.14E-10	0.02
OVARIES	5.20E-10	5.20E-10	0.02
PANCREAS	4.39E-10	4.39E-10	0.03
TESTES	3.08E-10	3.08E-10	0.03
THYROID	3.24E-10	3.24E-10	0.03
R.B.M.	3.53E-10	3.53E-10	0.01
BONE SURFACE	4.47E-10	4.47E-10	0.02
STOMACH	4.34E-10	4.34E-10	0.03
S.I.	4.89E-10	4.89E-10	0.01
U.L.I.	6.43E-10	6.43E-10	0.01
L.L.I.	1.01E-09	1.01E-09	0.03
SKIN	2.12E-10	2.12E-10	0.05
SPLEEN	3.98E-10	3.98E-10	0.04
THYMUS	3.11E-10	3.11E-10	0.04
UTERUS	4.53E-10	4.53E-10	0.02
ET	3.24E-10	3.24E-10	0.03

LUNG	3.10E-10	3.10E-10	-0.08
COLON	8.02E-10	8.02E-10	0.03
ET1	3.24E-10	3.24E-10	0.03
ET2	3.24E-10	3.24E-10	0.03
LN(ET)	3.24E-10	3.24E-10	0.03
BBsec	3.10E-10	3.10E-10	0.02
BBbas	3.10E-10	3.10E-10	0.02
bb	3.10E-10	3.10E-10	0.02
AI	3.10E-10	3.10E-10	0.02
LN(TH)	3.10E-10	3.10E-10	0.02
ESOPHAGUS	3.11E-10	3.11E-10	0.04
REMAINDER	**6.10E-10**	**6.10E-10**	**0.01**
C.E.D.	**4.54E-10**	**4.54E-10**	**0.02**
Maximum			**-0.08**

C.10.99. ^{204}Tl – Thallium-204

Maximum difference in ***Effective Dose***: **+0.13%** (Ingestion – f_1 = 0.99).
Maximum difference in ***Organ Dose***: **+0.17%** (Ingestion - Numerous).
Maximum difference excluding ***Respiratory Tract***: **+0.17%**.

C.10.99.1. Acute Inhalation (Type F: f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.23E-10	3.22E-10	0.16
URIN BLADDER	5.94E-10	5.94E-10	0.09
BRAIN	3.22E-10	3.22E-10	0.17
BREAST	3.22E-10	3.22E-10	0.16
GALL BLADDER	3.23E-10	N/A	N/A
HEART	3.22E-10	N/A	N/A
KIDNEYS	2.19E-09	2.19E-09	0
LIVER	3.22E-10	3.22E-10	0.15
MUSCLE	3.22E-10	3.22E-10	0.15
OVARIES	3.23E-10	3.22E-10	0.16
PANCREAS	3.23E-10	3.22E-10	0.17
TESTES	3.22E-10	3.22E-10	0.15
THYROID	3.22E-10	3.22E-10	0.17
R.B.M.	3.22E-10	3.22E-10	0.17
BONE SURFACE	3.24E-10	3.23E-10	0.14
STOMACH	3.77E-10	3.77E-10	0.12
S.I.	3.24E-10	3.24E-10	0.15
U.L.I.	1.32E-09	1.32E-09	0.06
L.L.I.	3.24E-09	3.24E-09	0
SKIN	3.22E-10	3.22E-10	0.15
SPLEEN	3.22E-10	3.22E-10	0.17
THYMUS	3.22E-10	3.22E-10	0.15
UTERUS	3.23E-10	3.22E-10	0.16
ET	2.38E-09	2.38E-09	0.05
LUNG	3.46E-10	3.46E-10	0.01
COLON	2.15E-09	2.15E-09	0.07
ET1	1.72E-06	1.72E-06	-0.02
ET2	6.58E-10	6.58E-10	0.07
LN(ET)	3.39E-10	3.38E-10	0.16
BBsec	3.89E-10	3.89E-10	0.08
BBbas	3.77E-10	3.77E-10	0.11
bb	3.30E-10	3.29E-10	0.16
AI	3.24E-10	3.23E-10	0.17
LN(TH)	3.22E-10	3.22E-10	0.17
ESOPHAGUS	3.22E-10	3.22E-10	0.15
REMAINDER	**1.36E-09**	**1.36E-09**	**0.04**
C.E.D.	**6.16E-10**	**6.16E-10**	**0.09**
Maximum			**0.17**

C.10.99.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.67E-10	6.65E-10	0.17
URIN BLADDER	1.23E-09	1.23E-09	0.07
BRAIN	6.66E-10	6.65E-10	0.17
BREAST	6.65E-10	6.64E-10	0.17
GALL BLADDER	6.66E-10	N/A	N/A
HEART	6.66E-10	N/A	N/A
KIDNEYS	4.52E-09	4.52E-09	0.00
LIVER	6.66E-10	6.65E-10	0.17
MUSCLE	6.66E-10	6.65E-10	0.17
OVARIES	6.67E-10	6.66E-10	0.17
PANCREAS	6.67E-10	6.66E-10	0.16
TESTES	6.66E-10	6.65E-10	0.17
THYROID	6.66E-10	6.65E-10	0.17
R.B.M.	6.66E-10	6.65E-10	0.16
BONE SURFACE	6.69E-10	6.68E-10	0.17
STOMACH	9.40E-10	9.39E-10	0.12
S.I.	6.74E-10	6.73E-10	0.16
U.L.I.	2.75E-09	2.74E-09	0.05
L.L.I.	6.76E-09	6.76E-09	0.01
SKIN	6.65E-10	6.64E-10	0.17
SPLEEN	6.66E-10	6.65E-10	0.16
THYMUS	6.66E-10	6.65E-10	0.17
UTERUS	6.67E-10	6.66E-10	0.16
ET	6.66E-10	6.65E-10	0.17
LUNG	6.66E-10	6.66E-10	0.06
COLON	4.48E-09	4.48E-09	0.06
ET1	6.66E-10	6.65E-10	0.17
ET2	6.66E-10	6.65E-10	0.17
LN(ET)	6.66E-10	6.65E-10	0.17
BBsec	6.66E-10	6.65E-10	0.17
BBbas	6.66E-10	6.65E-10	0.17
bb	6.66E-10	6.65E-10	0.17
AI	6.66E-10	6.65E-10	0.17
LN(TH)	6.66E-10	6.65E-10	0.17
ESOPHAGUS	6.66E-10	6.65E-10	0.17
REMAINDER	**2.59E-09**	**2.59E-09**	**0.02**
C.E.D.	**1.28E-09**	**1.28E-09**	**0.13**
Maximum			**0.17**

C.10.100. ^{170}Tm – Thulium-170

Maximum difference in ***Effective Dose***: **-0.24%** (Inhalation – type "M').
Maximum difference in ***Organ Dose***: **-0.30**% (Inhalation – type "M" - Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.15%**.

C.10.100.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.19E-11	7.18E-11	0.13
URIN BLADDER	7.53E-11	7.52E-11	0.12
BRAIN	6.65E-11	6.64E-11	0.14
BREAST	6.85E-11	6.84E-11	0.13
GALL BLADDER	6.88E-11	N/A	N/A
HEART	7.35E-11	N/A	N/A
KIDNEYS	6.80E-11	6.79E-11	0.14
LIVER	8.65E-10	8.65E-10	-0.01
MUSCLE	6.78E-11	6.77E-11	0.13
OVARIES	7.09E-11	7.08E-11	0.13
PANCREAS	6.97E-11	6.96E-11	0.14
TESTES	6.48E-11	6.47E-11	0.15
THYROID	6.69E-11	6.69E-11	0.13
R.B.M.	4.24E-09	4.24E-09	0.00
BONE SURFACE	6.40E-09	6.40E-09	-0.01
STOMACH	2.26E-10	2.26E-10	0.04
S.I.	4.65E-10	4.65E-10	0.02
U.L.I.	2.49E-09	2.49E-09	0.01
L.L.I.	7.13E-09	7.13E-09	0.00
SKIN	6.55E-11	6.54E-11	0.14
SPLEEN	6.84E-11	6.83E-11	0.13
THYMUS	7.03E-11	7.02E-11	0.13
UTERUS	6.77E-11	6.76E-11	0.14
ET	7.62E-09	7.62E-09	-0.02
LUNG	3.31E-08	3.32E-08	-0.30
COLON	4.50E-09	4.49E-09	0.05
ET1	2.05E-06	2.05E-06	0.03
ET2	5.58E-09	5.58E-09	-0.03
LN(ET)	5.83E-10	5.83E-10	-0.01
BBsec	7.18E-08	7.20E-08	-0.20
BBbas	5.74E-08	5.75E-08	-0.20
bb	2.01E-08	2.01E-08	0.06
AI	1.45E-08	1.45E-08	-0.01
LN(TH)	1.53E-09	1.53E-09	-0.02
ESOPHAGUS	7.03E-11	7.02E-11	0.13
REMAINDER	**7.97E-11**	**7.96E-11**	**0.11**
C.E.D.	**5.18E-09**	**5.20E-09**	**-0.24**
Maximum			**-0.30**

C.10.100.2. Acute Ingestion (f_1 = 0.99)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.03E-12	1.02E-12	0.11
URIN BLADDER	3.45E-12	3.45E-12	0.02
BRAIN	7.05E-13	7.04E-13	0.15
BREAST	7.14E-13	7.13E-13	0.15
GALL BLADDER	3.13E-12	N/A	N/A
HEART	8.02E-13	N/A	N/A
KIDNEYS	1.53E-12	1.53E-12	0.10
LIVER	9.72E-12	9.72E-12	0.00
MUSCLE	1.55E-12	1.55E-12	0.06
OVARIES	9.50E-12	9.50E-12	0.01
PANCREAS	1.54E-12	1.54E-12	0.06
TESTES	1.26E-12	1.26E-12	0.05
THYROID	6.99E-13	6.98E-13	0.15
R.B.M.	4.63E-11	4.63E-11	0.00
BONE SURFACE	6.97E-11	6.97E-11	0.01
STOMACH	3.85E-10	3.85E-10	-0.01
S.I.	9.62E-10	9.62E-10	0.01
U.L.I.	5.77E-09	5.77E-09	0.00
L.L.I.	1.68E-08	1.68E-08	0.02
SKIN	8.96E-13	8.95E-13	0.12
SPLEEN	1.31E-12	1.31E-12	0.05
THYMUS	7.10E-13	7.09E-13	0.15
UTERUS	4.56E-12	4.56E-12	0.03
ET	6.99E-13	6.98E-13	0.15
LUNG	7.65E-13	7.64E-13	0.03
COLON	1.06E-08	1.06E-08	0.00
ET1	6.99E-13	6.98E-13	0.15
ET2	6.99E-13	6.98E-13	0.15
LN(ET)	6.99E-13	6.98E-13	0.15
BBsec	7.65E-13	7.64E-13	0.14
BBbas	7.65E-13	7.64E-13	0.14
bb	7.65E-13	7.64E-13	0.14
AI	7.65E-13	7.64E-13	0.14
LN(TH)	7.65E-13	7.64E-13	0.14
ESOPHAGUS	7.10E-13	7.09E-13	0.15
REMAINDER	**2.15E-11**	**2.15E-11**	**-0.06**
C.E.D.	**1.32E-09**	**1.32E-09**	**0.02**
Maximum			**0.15**

C.10.101. ^{232}U – Uranium-232 (PLEIADES and ICRP: Independent Progeny Kinetics)

Maximum difference in ***Effective Dose***: **-23.9%** (Inhalation – type "F").
Maximum difference in ***Organ Dose***: **-92.04%** (Inhalation – type "S" – Bone Surface).
Maximum difference excluding ***Respiratory Tract***: **-92.04%**.

C.10.101.1. Acute Inhalation (Type F: $f_1 = 0.02$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.29E-06	2.27E-06	0.89
URIN BLADDER	2.28E-06	2.27E-06	0.83
BRAIN	2.29E-06	2.27E-06	0.89
BREAST	2.28E-06	2.26E-06	0.90
GALL BLADDER	2.28E-06	N/A	N/A
HEART	2.28E-06	N/A	N/A
KIDNEYS	1.46E-05	9.53E-06	53.67
LIVER	9.00E-06	1.00E-05	-10.28
MUSCLE	2.28E-06	2.26E-06	0.89
OVARIES	2.28E-06	2.42E-06	-5.75
PANCREAS	2.28E-06	2.26E-06	0.92
TESTES	2.28E-06	2.43E-06	-6.03
THYROID	2.28E-06	2.26E-06	0.93
R.B.M.	5.70E-06	9.93E-06	-42.57
BONE SURFACE	5.61E-05	1.03E-04	-45.31
STOMACH	2.28E-06	2.26E-06	0.90
S.I.	2.28E-06	2.27E-06	0.88
U.L.I.	2.29E-06	2.33E-06	-1.60
L.L.I.	2.30E-06	2.44E-06	-6.06
SKIN	2.28E-06	2.26E-06	0.92
SPLEEN	2.28E-06	2.23E-06	2.45
THYMUS	2.28E-06	2.26E-06	0.90
UTERUS	2.28E-06	2.26E-06	0.92
ET	2.29E-06	2.27E-06	0.91
LUNG	2.30E-06	2.28E-06	0.79
COLON	2.29E-06	2.38E-06	-3.57
ET1	9.70E-06	9.68E-06	0.24
ET2	2.29E-06	2.27E-06	0.90
LN(ET)	2.28E-06	2.26E-06	0.90
BBsec	2.33E-06	2.31E-06	0.89
BBbas	2.28E-06	2.26E-06	0.92
bb	2.30E-06	2.28E-06	0.92
AI	2.28E-06	2.26E-06	0.91
LN(TH)	2.28E-06	2.26E-06	0.93
ESOPHAGUS	2.28E-06	2.26E-06	0.90
REMAINDER	**2.41E-06**	**2.34E-06**	**3.07**
C.E.D.	**3.58E-06**	**4.70E-06**	**-23.90**
Maximum			**53.67**

C.10.101.2. Acute Inhalation (Type M: $f_1 = 0.02$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.61E-07	6.09E-07	-7.78
URIN BLADDER	5.61E-07	6.09E-07	-7.88
BRAIN	5.61E-07	6.08E-07	-7.74
BREAST	5.60E-07	6.07E-07	-7.74
GALL BLADDER	5.61E-07	N/A	N/A
HEART	5.61E-07	N/A	N/A
KIDNEYS	3.83E-06	2.87E-06	33.40
LIVER	2.23E-06	3.32E-06	-32.95
MUSCLE	5.61E-07	6.08E-07	-7.75
OVARIES	5.61E-07	7.72E-07	-27.38
PANCREAS	5.61E-07	6.08E-07	-7.76
TESTES	5.60E-07	7.77E-07	-27.90
THYROID	5.61E-07	6.08E-07	-7.73
R.B.M.	1.43E-06	4.09E-06	-64.99
BONE SURFACE	1.40E-05	4.63E-05	-69.67
STOMACH	5.61E-07	6.08E-07	-7.74
S.I.	5.62E-07	6.09E-07	-7.77
U.L.I.	5.68E-07	6.53E-07	-12.94
L.L.I.	5.84E-07	7.41E-07	-21.14
SKIN	5.60E-07	6.07E-07	-7.73
SPLEEN	5.60E-07	5.98E-07	-6.32
THYMUS	5.60E-07	6.08E-07	-7.74
UTERUS	5.60E-07	6.08E-07	-7.77
ET	2.36E-05	2.37E-05	-0.23
LUNG	2.70E-05	2.70E-05	-0.02
COLON	5.75E-07	6.91E-07	-16.74
ET1	7.98E-06	8.02E-06	-0.55
ET2	2.37E-05	2.37E-05	-0.24
LN(ET)	2.15E-06	2.17E-06	-0.89
BBsec	6.70E-05	6.72E-05	-0.29
BBbas	9.20E-06	9.27E-06	-0.70
bb	2.71E-05	2.71E-05	0.03
AI	1.58E-05	1.56E-05	1.40
LN(TH)	7.07E-06	7.00E-06	0.96
ESOPHAGUS	5.60E-07	6.08E-07	-7.74
REMAINDER	**6.05E-07**	**6.42E-07**	**-5.76**
C.E.D.	**4.06E-06**	**4.83E-06**	**-15.97**
Maximum			**-69.67**

C.10.101.3. Acute Inhalation (Type S: $f_1 = 0.002$)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.97E-08	1.03E-07	-41.97
URIN BLADDER	5.34E-08	9.69E-08	-44.82
BRAIN	5.39E-08	9.69E-08	-44.41
BREAST	6.00E-08	1.03E-07	-41.72
GALL BLADDER	5.55E-08	N/A	N/A
HEART	6.47E-08	N/A	N/A
KIDNEYS	5.61E-07	6.81E-07	-17.61
LIVER	2.39E-07	9.61E-07	-75.17
MUSCLE	5.60E-08	9.90E-08	-43.46
OVARIES	5.35E-08	2.05E-07	-73.92
PANCREAS	5.78E-08	1.01E-07	-42.73
TESTES	5.32E-08	2.07E-07	-74.32
THYROID	5.60E-08	9.91E-08	-43.42
R.B.M.	1.69E-07	1.62E-06	-89.57
BONE SURFACE	1.60E-06	2.00E-05	-92.04
STOMACH	5.73E-08	1.00E-07	-42.90
S.I.	5.56E-08	9.88E-08	-43.66
U.L.I.	6.49E-08	1.28E-07	-49.48
L.L.I.	8.56E-08	1.89E-07	-54.69
SKIN	5.47E-08	9.77E-08	-44.02
SPLEEN	5.78E-08	9.93E-08	-41.73
THYMUS	6.13E-08	1.04E-07	-41.26
UTERUS	5.35E-08	9.66E-08	-44.64
ET	2.78E-04	2.78E-04	-0.03
LUNG	1.54E-04	1.52E-04	1.20
COLON	7.39E-08	1.55E-07	-52.23
ET1	7.51E-06	7.55E-06	-0.54
ET2	2.77E-04	2.77E-04	-0.03
LN(ET)	8.37E-04	8.22E-04	1.78
BBsec	9.39E-05	9.41E-05	-0.24
BBbas	1.56E-05	1.57E-05	-0.45
bb	7.88E-05	7.87E-05	0.03
AI	3.21E-04	3.15E-04	1.78
LN(TH)	2.83E-03	2.78E-03	1.80
ESOPHAGUS	6.13E-08	1.04E-07	-41.26
REMAINDER	**1.39E-04**	**1.39E-04**	**-0.08**
C.E.D.	**2.55E-05**	**2.57E-05**	**-0.89**
Maximum			**-92.04**

C.10.101.4. Acute Ingestion (f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.60E-07	1.59E-07	0.91
URIN BLADDER	1.60E-07	1.59E-07	0.81
BRAIN	1.60E-07	1.59E-07	0.89
BREAST	1.60E-07	1.59E-07	0.96
GALL BLADDER	1.60E-07	N/A	N/A
HEART	1.60E-07	N/A	N/A
KIDNEYS	1.03E-06	6.69E-07	53.72
LIVER	6.31E-07	7.04E-07	-10.31
MUSCLE	1.60E-07	1.59E-07	0.91
OVARIES	1.60E-07	1.71E-07	-6.43
PANCREAS	1.60E-07	1.59E-07	0.94
TESTES	1.60E-07	1.70E-07	-5.97
THYROID	1.60E-07	1.59E-07	0.91
R.B.M.	4.00E-07	6.96E-07	-42.56
BONE SURFACE	3.93E-06	7.19E-06	-45.28
STOMACH	1.61E-07	1.60E-07	0.94
S.I.	1.63E-07	1.62E-07	0.86
U.L.I.	1.79E-07	1.81E-07	-1.45
L.L.I.	2.15E-07	2.25E-07	-4.61
SKIN	1.60E-07	1.59E-07	0.91
SPLEEN	1.60E-07	1.56E-07	2.44
THYMUS	1.60E-07	1.59E-07	0.94
UTERUS	1.60E-07	1.59E-07	0.89
ET	1.60E-07	1.59E-07	0.91
LUNG	1.60E-07	1.59E-07	0.84
COLON	1.94E-07	2.00E-07	-2.96
ET1	1.60E-07	1.59E-07	0.91
ET2	1.60E-07	1.59E-07	0.91
LN(ET)	1.60E-07	1.59E-07	0.91
BBsec	1.60E-07	1.59E-07	0.90
BBbas	1.60E-07	1.59E-07	0.90
bb	1.60E-07	1.59E-07	0.90
AI	1.60E-07	1.59E-07	0.90
LN(TH)	1.60E-07	1.59E-07	0.90
ESOPHAGUS	1.60E-07	1.59E-07	0.94
REMAINDER	**1.69E-07**	**1.64E-07**	**3.08**
C.E.D.	**2.55E-07**	**3.29E-07**	**-22.44**
Maximum			**53.72**

C.10.101.5. Acute Ingestion (f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.60E-08	1.59E-08	0.91
URIN BLADDER	1.60E-08	1.59E-08	0.81
BRAIN	1.60E-08	1.59E-08	0.89
BREAST	1.60E-08	1.59E-08	0.89
GALL BLADDER	1.60E-08	N/A	N/A
HEART	1.60E-08	N/A	N/A
KIDNEYS	1.03E-07	6.69E-08	53.69
LIVER	6.31E-08	7.04E-08	-10.34
MUSCLE	1.60E-08	1.59E-08	0.91
OVARIES	1.60E-08	1.71E-08	-6.47
PANCREAS	1.60E-08	1.59E-08	0.94
TESTES	1.60E-08	1.70E-08	-5.97
THYROID	1.60E-08	1.59E-08	0.91
R.B.M.	4.00E-08	6.97E-08	-42.58
BONE SURFACE	3.93E-07	7.19E-07	-45.31
STOMACH	1.73E-08	1.71E-08	0.88
S.I.	1.91E-08	1.90E-08	0.77
U.L.I.	3.48E-08	3.51E-08	-0.75
L.L.I.	7.13E-08	7.23E-08	-1.44
SKIN	1.60E-08	1.59E-08	0.91
SPLEEN	1.60E-08	1.56E-08	2.44
THYMUS	1.60E-08	1.59E-08	0.94
UTERUS	1.60E-08	1.59E-08	0.89
ET	1.60E-08	1.59E-08	0.91
LUNG	1.60E-08	1.59E-08	0.84
COLON	5.06E-08	5.12E-08	-1.14
ET1	1.60E-08	1.59E-08	0.91
ET2	1.60E-08	1.59E-08	0.91
LN(ET)	1.60E-08	1.59E-08	0.91
BBsec	1.60E-08	1.59E-08	0.91
BBbas	1.60E-08	1.59E-08	0.91
bb	1.60E-08	1.59E-08	0.91
AI	1.60E-08	1.59E-08	0.91
LN(TH)	1.60E-08	1.59E-08	0.91
ESOPHAGUS	1.60E-08	1.59E-08	0.94
REMAINDER	**1.70E-08**	**1.65E-08**	**3.06**
C.E.D.	**2.94E-08**	**3.68E-08**	**-20.10**
Maximum			**53.69**

Note: ICRP Publication 68 (ICRP 1994b) tabulated dose coefficients (and **PLEIADES**) assume independent progeny kinetics. IMBA assigns the uranium biokinetic model to all progeny, including ^{228}Th. Thus, for the bone surface (and red bone marrow), IMBA's calculated doses are as much as ***12.5-fold lower*** (-92.04%) than those calculated by ICRP/**PLEIADES**).

C.10.102. ^{234}U – Uranium-234

Maximum difference in ***Effective Dose***: **-0.16%** (Inhalation – type "F").
Maximum difference in ***Organ Dose***: **-0.28%** (Ingestion – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.24%**.

C.10.102.1. Acute Inhalation (Type F: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.8466E-07	3.8530E-07	-0.17
URIN BLADDER	3.8596E-07	3.8660E-07	-0.17
BRAIN	3.8466E-07	3.8530E-07	-0.17
BREAST	3.8466E-07	3.8530E-07	-0.17
GALL BLADDER	3.8466E-07	N/A	N/A
HEART	3.8466E-07	N/A	N/A
KIDNEYS	4.0101E-06	4.0150E-06	-0.12
LIVER	1.5026E-06	1.5050E-06	-0.16
MUSCLE	3.8466E-07	3.8530E-07	-0.17
OVARIES	3.8466E-07	3.8530E-07	-0.17
PANCREAS	3.8466E-07	3.8530E-07	-0.17
TESTES	3.8466E-07	3.8530E-07	-0.17
THYROID	3.8466E-07	3.8530E-07	-0.17
R.B.M.	1.1451E-06	1.1460E-06	-0.08
BONE SURFACE	1.1130E-05	1.1150E-05	-0.18
STOMACH	3.8488E-07	3.8550E-07	-0.16
S.I.	3.8520E-07	3.8590E-07	-0.18
U.L.I.	3.8799E-07	3.8860E-07	-0.16
L.L.I.	3.9442E-07	3.9510E-07	-0.17
SKIN	3.8466E-07	3.8530E-07	-0.17
SPLEEN	3.8466E-07	3.8530E-07	-0.17
THYMUS	3.8466E-07	3.8530E-07	-0.17
UTERUS	3.8466E-07	3.8530E-07	-0.17
ET	3.8571E-07	3.8640E-07	-0.18
LUNG	3.9586E-07	3.9690E-07	-0.26
COLON	3.9077E-07	3.9140E-07	-0.16
ET1	4.0376E-07	4.0440E-07	-0.16
ET2	3.8570E-07	3.8640E-07	-0.18
LN(ET)	3.8487E-07	3.8550E-07	-0.16
BBsec	4.1495E-07	4.1570E-07	-0.18
BBbas	3.8512E-07	3.8580E-07	-0.18
bb	4.0229E-07	4.0290E-07	-0.15
AI	3.8529E-07	3.8600E-07	-0.18
LN(TH)	3.8466E-07	3.8530E-07	-0.17
ESOPHAGUS	3.8466E-07	3.8530E-07	-0.17
REMAINDER	**4.2121E-07**	**4.2190E-07**	**-0.16**
C.E.D.	**6.4326E-07**	**6.4430E-07**	**-0.16**
Maximum			**-0.26**

C.10.102.2. Acute Inhalation (Type M: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.3833E-08	9.4000E-08	-0.18
URIN BLADDER	9.4151E-08	9.4310E-08	-0.17
BRAIN	9.3833E-08	9.4000E-08	-0.18
BREAST	9.3832E-08	9.4000E-08	-0.18
GALL BLADDER	9.3832E-08	N/A	N/A
HEART	9.3833E-08	N/A	N/A
KIDNEYS	9.8141E-07	9.8260E-07	-0.12
LIVER	3.6758E-07	3.6810E-07	-0.14
MUSCLE	9.3833E-08	9.4000E-08	-0.18
OVARIES	9.3833E-08	9.4000E-08	-0.18
PANCREAS	9.3832E-08	9.4000E-08	-0.18
TESTES	9.3832E-08	9.4000E-08	-0.18
THYROID	9.3832E-08	9.4000E-08	-0.18
R.B.M.	2.7994E-07	2.8020E-07	-0.09
BONE SURFACE	2.7214E-06	2.7280E-06	-0.24
STOMACH	9.4299E-08	9.4460E-08	-0.17
S.I.	9.4975E-08	9.5140E-08	-0.17
U.L.I.	1.0076E-07	1.0090E-07	-0.14
L.L.I.	1.1415E-07	1.1430E-07	-0.13
SKIN	9.3832E-08	9.4000E-08	-0.18
SPLEEN	9.3833E-08	9.4000E-08	-0.18
THYMUS	9.3832E-08	9.4000E-08	-0.18
UTERUS	9.3832E-08	9.4000E-08	-0.18
ET	1.2479E-05	1.2480E-05	-0.01
LUNG	1.6285E-05	1.6300E-05	-0.09
COLON	1.0655E-07	1.0670E-07	-0.14
ET1	1.1296E-07	1.1310E-07	-0.12
ET2	1.2503E-05	1.2510E-05	-0.06
LN(ET)	6.1888E-07	6.1920E-07	-0.05
BBsec	3.7912E-05	3.7990E-05	-0.21
BBbas	2.8741E-06	2.8800E-06	-0.20
bb	2.0882E-05	2.0830E-05	0.25
AI	7.6218E-06	7.6230E-06	-0.02
LN(TH)	2.5418E-06	2.5430E-06	-0.05
ESOPHAGUS	9.3832E-08	9.4000E-08	-0.18
REMAINDER	**1.0884E-07**	**1.0900E-07**	**-0.15**
C.E.D.	**2.1014E-06**	**2.1040E-06**	**-0.12**
Maximum			**0.25**

C.10.102.3. Acute Inhalation (Type S: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.6902E-09	8.7060E-09	-0.18
URIN BLADDER	8.7203E-09	8.7360E-09	-0.18
BRAIN	8.6871E-09	8.7030E-09	-0.18
BREAST	8.6902E-09	8.7060E-09	-0.18
GALL BLADDER	8.6874E-09	N/A	N/A
HEART	8.6981E-09	N/A	N/A
KIDNEYS	1.0164E-07	1.0180E-07	-0.16
LIVER	3.6804E-08	3.6860E-08	-0.15
MUSCLE	8.6952E-09	8.7110E-09	-0.18
OVARIES	8.6880E-09	8.7030E-09	-0.17
PANCREAS	8.6882E-09	8.7040E-09	-0.18
TESTES	8.6870E-09	8.7020E-09	-0.17
THYROID	8.6874E-09	8.7030E-09	-0.18
R.B.M.	2.7961E-08	2.7990E-08	-0.10
BONE SURFACE	2.7122E-07	2.7180E-07	-0.21
STOMACH	9.2162E-09	9.2320E-09	-0.17
S.I.	1.0003E-08	1.0020E-08	-0.17
U.L.I.	1.6653E-08	1.6670E-08	-0.10
L.L.I.	3.2055E-08	3.2070E-08	-0.05
SKIN	8.6874E-09	8.7030E-09	-0.18
SPLEEN	8.6902E-09	8.7060E-09	-0.18
THYMUS	8.6891E-09	8.7050E-09	-0.18
UTERUS	8.6870E-09	8.7020E-09	-0.17
ET	7.5121E-05	7.5140E-05	-0.03
LUNG	4.0717E-05	4.0750E-05	-0.08
COLON	2.3313E-08	2.3320E-08	-0.03
ET1	2.8816E-08	2.8830E-08	-0.05
ET2	7.5140E-05	7.5160E-05	-0.03
LN(ET)	1.3069E-04	1.3070E-04	-0.01
BBsec	4.9282E-05	4.9390E-05	-0.22
BBbas	4.5919E-06	4.6020E-06	-0.22
bb	3.0022E-05	2.9960E-05	0.21
AI	6.3961E-05	6.3970E-05	-0.01
LN(TH)	4.5093E-04	4.5100E-04	-0.02
ESOPHAGUS	8.6891E-09	8.7050E-09	-0.18
REMAINDER	**3.7565E-05**	**3.7570E-05**	**-0.01**
C.E.D.	**6.7797E-06**	**6.7840E-06**	**-0.06**
Maximum			**-0.22**

C.10.102.4. Acute Ingestion (f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.6985E-09	2.7030E-09	-0.17
URIN BLADDER	2.7077E-09	2.7120E-09	-0.16
BRAIN	2.6985E-09	2.7030E-09	-0.17
BREAST	2.6985E-09	2.7030E-09	-0.17
GALL BLADDER	2.6987E-09	N/A	N/A
HEART	2.6985E-09	N/A	N/A
KIDNEYS	2.8132E-08	2.8160E-08	-0.10
LIVER	1.0542E-08	1.0560E-08	-0.17
MUSCLE	2.6986E-09	2.7030E-09	-0.16
OVARIES	2.7006E-09	2.7050E-09	-0.16
PANCREAS	2.6985E-09	2.7030E-09	-0.17
TESTES	2.6985E-09	2.7030E-09	-0.17
THYROID	2.6985E-09	2.7030E-09	-0.17
R.B.M.	8.0334E-09	8.0400E-09	-0.08
BONE SURFACE	7.8079E-08	7.8250E-08	-0.22
STOMACH	3.8101E-09	3.8150E-09	-0.13
S.I.	5.4724E-09	5.4770E-09	-0.08
U.L.I.	1.9487E-08	1.9490E-08	-0.02
L.L.I.	5.1948E-08	5.1950E-08	0.00
SKIN	2.6985E-09	2.7030E-09	-0.17
SPLEEN	2.6985E-09	2.7030E-09	-0.17
THYMUS	2.6985E-09	2.7030E-09	-0.17
UTERUS	2.6986E-09	2.7030E-09	-0.16
ET	2.6985E-09	2.7030E-09	-0.17
LUNG	2.6985E-09	2.7060E-09	-0.28
COLON	3.3525E-08	3.3510E-08	0.04
ET1	2.6985E-09	2.7030E-09	-0.17
ET2	2.6985E-09	2.7030E-09	-0.17
LN(ET)	2.6985E-09	2.7030E-09	-0.17
BBsec	2.6985E-09	2.7030E-09	-0.17
BBbas	2.6985E-09	2.7030E-09	-0.17
bb	2.6985E-09	2.7030E-09	-0.17
AI	2.6985E-09	2.7030E-09	-0.17
LN(TH)	2.6985E-09	2.7030E-09	-0.17
ESOPHAGUS	2.6985E-09	2.7030E-09	-0.17
REMAINDER	**3.0126E-09**	**3.0180E-09**	**-0.18**
C.E.D.	**8.3338E-09**	**8.3390E-09**	**-0.06**
Maximum			**-0.28**

C.10.103. ^{235}U – Uranium-235

Maximum difference in ***Effective Dose***: **-0.50%** (Inhalation – type "F").
Maximum difference in ***Organ Dose***: **-1.93%** (Inhalation – type "M" – Bone Surface).
Maximum difference excluding ***Respiratory Tract***: **-1.93%**.

C.10.103.1. Acute Inhalation (Type F: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.5781E-07	3.5840E-07	-0.16
URIN BLADDER	3.5838E-07	3.5890E-07	-0.14
BRAIN	3.5739E-07	3.5800E-07	-0.17
BREAST	3.5681E-07	3.5740E-07	-0.17
GALL BLADDER	3.5728E-07	N/A	N/A
HEART	3.5715E-07	N/A	N/A
KIDNEYS	3.7161E-06	3.7210E-06	-0.13
LIVER	1.3932E-06	1.3950E-06	-0.13
MUSCLE	3.5720E-07	3.5780E-07	-0.17
OVARIES	3.5743E-07	3.5870E-07	-0.35
PANCREAS	3.5740E-07	3.5800E-07	-0.17
TESTES	3.5688E-07	3.5850E-07	-0.45
THYROID	3.5718E-07	3.5780E-07	-0.17
R.B.M.	1.0708E-06	1.0730E-06	-0.21
BONE SURFACE	1.0320E-05	1.0520E-05	-1.90
STOMACH	3.5725E-07	3.5790E-07	-0.18
S.I.	3.5789E-07	3.5850E-07	-0.17
U.L.I.	3.6068E-07	3.6130E-07	-0.17
L.L.I.	3.6793E-07	3.6850E-07	-0.15
SKIN	3.5686E-07	3.5750E-07	-0.18
SPLEEN	3.5715E-07	3.5780E-07	-0.18
THYMUS	3.5705E-07	3.5770E-07	-0.18
UTERUS	3.5724E-07	3.5780E-07	-0.16
ET	3.6102E-07	3.6160E-07	-0.16
LUNG	3.6630E-07	3.6730E-07	-0.27
COLON	3.6382E-07	3.6440E-07	-0.16
ET1	1.0999E-06	1.1000E-06	-0.01
ET2	3.6028E-07	3.6090E-07	-0.17
LN(ET)	3.5949E-07	3.6010E-07	-0.17
BBsec	3.7756E-07	3.7820E-07	-0.17
BBbas	3.5758E-07	3.5820E-07	-0.17
bb	3.7355E-07	3.7410E-07	-0.15
AI	3.5780E-07	3.5840E-07	-0.17
LN(TH)	3.5721E-07	3.5780E-07	-0.16
ESOPHAGUS	3.5705E-07	3.5770E-07	-0.18
REMAINDER	**3.9108E-07**	**3.9170E-07**	**-0.16**
C.E.D.	**5.9792E-07**	**6.0090E-07**	**-0.50**
Maximum			**-1.90**

C.10.103.2. Acute Inhalation (Type M: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.7463E-08	8.7620E-08	-0.18
URIN BLADDER	8.7465E-08	8.7590E-08	-0.14
BRAIN	8.7191E-08	8.7340E-08	-0.17
BREAST	8.7213E-08	8.7360E-08	-0.17
GALL BLADDER	8.7231E-08	N/A	N/A
HEART	8.7458E-08	N/A	N/A
KIDNEYS	9.0954E-07	9.1070E-07	-0.13
LIVER	3.4095E-07	3.4150E-07	-0.16
MUSCLE	8.7223E-08	8.7380E-08	-0.18
OVARIES	8.7271E-08	8.7590E-08	-0.36
PANCREAS	8.7315E-08	8.7470E-08	-0.18
TESTES	8.7062E-08	8.7470E-08	-0.47
THYROID	8.7196E-08	8.7350E-08	-0.18
R.B.M.	2.6188E-07	2.6240E-07	-0.20
BONE SURFACE	2.5234E-06	2.5730E-06	-1.93
STOMACH	8.7656E-08	8.7810E-08	-0.18
S.I.	8.8385E-08	8.8540E-08	-0.18
U.L.I.	9.4409E-08	9.4560E-08	-0.16

L.L.I.	1.0919E-07	1.0940E-07	-0.19
SKIN	8.7085E-08	8.7240E-08	-0.18
SPLEEN	8.7251E-08	8.7400E-08	-0.17
THYMUS	8.7313E-08	8.7470E-08	-0.18
UTERUS	8.7181E-08	8.7330E-08	-0.17
ET	1.1512E-05	1.1520E-05	-0.07
LUNG	1.3966E-05	1.3980E-05	-0.10
COLON	1.0080E-07	1.0100E-07	-0.20
ET1	8.3027E-07	8.3030E-07	0.00
ET2	1.1533E-05	1.1540E-05	-0.06
LN(ET)	5.7599E-07	5.7630E-07	-0.05
BBsec	2.8853E-05	2.8920E-05	-0.23
BBbas	2.2822E-06	2.2870E-06	-0.21
bb	1.9303E-05	1.9260E-05	0.22
AI	7.0616E-06	7.0630E-06	-0.02
LN(TH)	2.3537E-06	2.3550E-06	-0.06
ESOPHAGUS	8.7313E-08	8.7470E-08	-0.18
REMAINDER	**1.0111E-07**	**1.0130E-07**	**-0.19**
C.E.D.	**1.8131E-06**	**1.8150E-06**	**-0.10**
Maximum			**-1.93**

C.10.103.3. Acute Inhalation (Type S: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	9.6616E-09	9.6760E-09	-0.15
URIN BLADDER	8.1441E-09	8.1540E-09	-0.12
BRAIN	8.1576E-09	8.1720E-09	-0.18
BREAST	9.6091E-09	9.6240E-09	-0.15
GALL BLADDER	8.5839E-09	N/A	N/A
HEART	1.1057E-08	N/A	N/A
KIDNEYS	9.4641E-08	9.4760E-08	-0.13
LIVER	3.5508E-08	3.5560E-08	-0.15
MUSCLE	8.8032E-09	8.8180E-09	-0.17
OVARIES	8.2148E-09	8.2440E-09	-0.35
PANCREAS	9.1861E-09	9.2010E-09	-0.16
TESTES	8.0713E-09	8.1100E-09	-0.48
THYROID	8.6579E-09	8.6720E-09	-0.16
R.B.M.	2.6931E-08	2.6980E-08	-0.18
BONE SURFACE	2.5250E-07	2.5710E-07	-1.79
STOMACH	9.3925E-09	9.4070E-09	-0.15
S.I.	9.5707E-09	9.5850E-09	-0.15
U.L.I.	1.6597E-08	1.6610E-08	-0.08
L.L.I.	3.3510E-08	3.3530E-08	-0.06
SKIN	8.3462E-09	8.3610E-09	-0.18
SPLEEN	9.1717E-09	9.1860E-09	-0.16
THYMUS	9.9870E-09	1.0000E-08	-0.13
UTERUS	8.1440E-09	8.1590E-09	-0.18
ET	6.9295E-05	6.9310E-05	-0.02
LUNG	3.6030E-05	3.6050E-05	-0.06
COLON	2.3911E-08	2.3920E-08	-0.04
ET1	7.6782E-07	7.6770E-07	0.02
ET2	6.9312E-05	6.9330E-05	-0.03
LN(ET)	1.2109E-04	1.2110E-04	-0.01
BBsec	3.7404E-05	3.7490E-05	-0.23
BBbas	3.6275E-06	3.6350E-06	-0.21
bb	2.7161E-05	2.7100E-05	0.23
AI	5.9268E-05	5.9280E-05	-0.02
LN(TH)	4.1726E-04	4.1730E-04	-0.01
ESOPHAGUS	9.9870E-09	1.0000E-08	-0.13
REMAINDER	**3.4652E-05**	**3.4660E-05**	**-0.02**
C.E.D.	**6.0713E-06**	**6.0740E-06**	**-0.04**
Maximum			**-1.79**

C.10.103.4. Acute Ingestion (f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.5112E-08	2.5150E-08	-0.15
URIN BLADDER	2.5208E-08	2.5240E-08	-0.13
BRAIN	2.5073E-08	2.5110E-08	-0.15
BREAST	2.5033E-08	2.5070E-08	-0.15
GALL BLADDER	2.5122E-08	N/A	N/A
HEART	2.5060E-08	N/A	N/A
KIDNEYS	2.6073E-07	2.6100E-07	-0.10
LIVER	9.7745E-08	9.7880E-08	-0.14
MUSCLE	2.5080E-08	2.5120E-08	-0.16
OVARIES	2.5275E-08	2.5360E-08	-0.34
PANCREAS	2.5095E-08	2.5140E-08	-0.18
TESTES	2.5054E-08	2.5170E-08	-0.46
THYROID	2.5058E-08	2.5100E-08	-0.17
R.B.M.	7.5157E-08	7.5280E-08	-0.16
BONE SURFACE	7.2401E-07	7.3810E-07	-1.91
STOMACH	2.6173E-08	2.6210E-08	-0.14
S.I.	2.7923E-08	2.7960E-08	-0.13
U.L.I.	4.2206E-08	4.2250E-08	-0.10
L.L.I.	7.7234E-08	7.7280E-08	-0.06
SKIN	2.5042E-08	2.5080E-08	-0.15
SPLEEN	2.5073E-08	2.5110E-08	-0.15
THYMUS	2.5049E-08	2.5090E-08	-0.16
UTERUS	2.5151E-08	2.5190E-08	-0.15
ET	2.5058E-08	2.5100E-08	-0.17
LUNG	2.5062E-08	2.5130E-08	-0.27
COLON	5.7353E-08	5.7380E-08	-0.05
ET1	2.5058E-08	2.5100E-08	-0.17
ET2	2.5058E-08	2.5100E-08	-0.17
LN(ET)	2.5058E-08	2.5100E-08	-0.17
BBsec	2.5062E-08	2.5100E-08	-0.15
BBbas	2.5062E-08	2.5100E-08	-0.15
bb	2.5062E-08	2.5100E-08	-0.15
AI	2.5062E-08	2.5100E-08	-0.15
LN(TH)	2.5062E-08	2.5100E-08	-0.15
ESOPHAGUS	2.5049E-08	2.5090E-08	-0.16
REMAINDER	**2.7514E-08**	**2.7560E-08**	**-0.17**
C.E.D.	**4.5875E-08**	**4.6080E-08**	**-0.44**
Maximum			**-1.91**

C.10.103.5. Acute Ingestion (f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.5206E-09	2.5250E-09	-0.17
URIN BLADDER	2.5809E-09	2.5840E-09	-0.12
BRAIN	2.5073E-09	2.5110E-09	-0.15
BREAST	2.5045E-09	2.5080E-09	-0.14
GALL BLADDER	2.5652E-09	N/A	N/A
HEART	2.5095E-09	N/A	N/A
KIDNEYS	2.6095E-08	2.6120E-08	-0.10
LIVER	9.7884E-09	9.8020E-09	-0.14
MUSCLE	2.5280E-09	2.5320E-09	-0.16
OVARIES	2.7132E-09	2.7220E-09	-0.32
PANCREAS	2.5294E-09	2.5330E-09	-0.14
TESTES	2.5208E-09	2.5320E-09	-0.44
THYROID	2.5059E-09	2.5100E-09	-0.16
R.B.M.	7.5469E-09	7.5590E-09	-0.16
BONE SURFACE	7.2424E-08	7.3830E-08	-1.90
STOMACH	3.6307E-09	3.6350E-09	-0.12
S.I.	5.4154E-09	5.4200E-09	-0.08
U.L.I.	1.9968E-08	1.9970E-08	-0.01
L.L.I.	5.5625E-08	5.5630E-08	-0.01

SKIN	2.5101E-09	2.5140E-09	-0.16
SPLEEN	2.5231E-09	2.5270E-09	-0.15
THYMUS	2.5058E-09	2.5100E-09	-0.17
UTERUS	2.5972E-09	2.6010E-09	-0.15
ET	2.5059E-09	2.5100E-09	-0.16
LUNG	2.5083E-09	2.5150E-09	-0.27
COLON	3.5387E-08	3.5380E-08	0.02
ET1	2.5059E-09	2.5100E-09	-0.16
ET2	2.5059E-09	2.5100E-09	-0.16
LN(ET)	2.5059E-09	2.5100E-09	-0.16
BBsec	2.5083E-09	2.5120E-09	-0.15
BBbas	2.5083E-09	2.5120E-09	-0.15
bb	2.5083E-09	2.5120E-09	-0.15
AI	2.5083E-09	2.5120E-09	-0.15
LN(TH)	2.5083E-09	2.5120E-09	-0.15
ESOPHAGUS	2.5058E-09	2.5100E-09	-0.17
REMAINDER	**2.8248E-09**	**2.8290E-09**	**-0.15**
C.E.D.	**8.3162E-09**	**8.3350E-09**	**-0.23**
Maximum			**-1.90**

C.10.104. ^{236}U – Uranium-236

Maximum difference in ***Effective Dose***: **-0.17%** (Inhalation – type "F").
Maximum difference in ***Organ Dose***: **-0.28%** (Inhalation – type "F" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.23%**.

C.10.104.1. Acute Inhalation (Type F: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.6429E-07	3.6490E-07	-0.17
URIN BLADDER	3.6551E-07	3.6610E-07	-0.16
BRAIN	3.6429E-07	3.6490E-07	-0.17
BREAST	3.6428E-07	3.6490E-07	-0.17
GALL BLADDER	3.6428E-07	N/A	N/A
HEART	3.6428E-07	N/A	N/A
KIDNEYS	3.7976E-06	3.8020E-06	-0.12
LIVER	1.4230E-06	1.4250E-06	-0.14
MUSCLE	3.6428E-07	3.6490E-07	-0.17
OVARIES	3.6428E-07	3.6490E-07	-0.17
PANCREAS	3.6428E-07	3.6490E-07	-0.17
TESTES	3.6428E-07	3.6490E-07	-0.17
THYROID	3.6428E-07	3.6490E-07	-0.17
R.B.M.	1.0844E-06	1.0850E-06	-0.06
BONE SURFACE	1.0540E-05	1.0560E-05	-0.19
STOMACH	3.6449E-07	3.6510E-07	-0.17
S.I.	3.6480E-07	3.6540E-07	-0.16
U.L.I.	3.6743E-07	3.6810E-07	-0.18
L.L.I.	3.7352E-07	3.7410E-07	-0.16
SKIN	3.6428E-07	3.6490E-07	-0.17
SPLEEN	3.6428E-07	3.6490E-07	-0.17
THYMUS	3.6428E-07	3.6490E-07	-0.17
UTERUS	3.6428E-07	3.6490E-07	-0.17
ET	3.6526E-07	3.6590E-07	-0.17
LUNG	3.7396E-07	3.7500E-07	-0.28
COLON	3.7006E-07	3.7070E-07	-0.17
ET1	3.6759E-07	3.6820E-07	-0.17
ET2	3.6526E-07	3.6590E-07	-0.17
LN(ET)	3.6448E-07	3.6510E-07	-0.17
BBsec	3.8727E-07	3.8790E-07	-0.16
BBbas	3.6468E-07	3.6530E-07	-0.17
bb	3.8106E-07	3.8160E-07	-0.14
AI	3.6489E-07	3.6550E-07	-0.17
LN(TH)	3.6428E-07	3.6490E-07	-0.17
ESOPHAGUS	3.6428E-07	3.6490E-07	-0.17
REMAINDER	**3.9889E-07**	**3.9960E-07**	**-0.18**
C.E.D.	**6.0906E-07**	**6.1010E-07**	**-0.17**
Maximum			**-0.28**

C.10.104.2. Acute Inhalation (Type M: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.8862E-08	8.9020E-08	-0.18
URIN BLADDER	8.9162E-08	8.9320E-08	-0.18
BRAIN	8.8862E-08	8.9020E-08	-0.18
BREAST	8.8861E-08	8.9020E-08	-0.18
GALL BLADDER	8.8861E-08	N/A	N/A
HEART	8.8862E-08	N/A	N/A
KIDNEYS	9.2937E-07	9.3050E-07	-0.12
LIVER	3.4809E-07	3.4860E-07	-0.15
MUSCLE	8.8862E-08	8.9020E-08	-0.18
OVARIES	8.8862E-08	8.9020E-08	-0.18
PANCREAS	8.8861E-08	8.9020E-08	-0.18
TESTES	8.8861E-08	8.9020E-08	-0.18
THYROID	8.8861E-08	8.9020E-08	-0.18
R.B.M.	2.6509E-07	2.6530E-07	-0.08
BONE SURFACE	2.5771E-06	2.5830E-06	-0.23
STOMACH	8.9302E-08	8.9460E-08	-0.18
S.I.	8.9942E-08	9.0100E-08	-0.18
U.L.I.	9.5412E-08	9.5570E-08	-0.17
L.L.I.	1.0808E-07	1.0820E-07	-0.11
SKIN	8.8861E-08	8.9020E-08	-0.18
SPLEEN	8.8861E-08	8.9020E-08	-0.18
THYMUS	8.8861E-08	8.9020E-08	-0.18
UTERUS	8.8861E-08	8.9020E-08	-0.18
ET	1.1832E-05	1.1840E-05	-0.07
LUNG	1.4633E-05	1.4650E-05	-0.12
COLON	1.0089E-07	1.0100E-07	-0.11
ET1	9.2185E-08	9.2340E-08	-0.17
ET2	1.1855E-05	1.1860E-05	-0.04
LN(ET)	5.8607E-07	5.8640E-07	-0.06
BBsec	3.1349E-05	3.1420E-05	-0.23
BBbas	2.4392E-06	2.4440E-06	-0.20
bb	1.9823E-05	1.9780E-05	0.22
AI	7.2176E-06	7.2190E-06	-0.02
LN(TH)	2.4070E-06	2.4080E-06	-0.04
ESOPHAGUS	8.8861E-08	8.9020E-08	-0.18
REMAINDER	**1.0308E-07**	**1.0330E-07**	**-0.21**
C.E.D.	**1.8954E-06**	**1.8970E-06**	**-0.08**
Maximum			**-0.23**

C.10.104.3. Acute Inhalation (Type S: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.2293E-09	8.2440E-09	-0.18
URIN BLADDER	8.2583E-09	8.2730E-09	-0.18
BRAIN	8.2269E-09	8.2420E-09	-0.18
BREAST	8.2293E-09	8.2440E-09	-0.18
GALL BLADDER	8.2270E-09	N/A	N/A
HEART	8.2361E-09	N/A	N/A
KIDNEYS	9.6252E-08	9.6370E-08	-0.12
LIVER	3.4854E-08	3.4910E-08	-0.16
MUSCLE	8.2342E-09	8.2490E-09	-0.18
OVARIES	8.2277E-09	8.2420E-09	-0.17
PANCREAS	8.2276E-09	8.2420E-09	-0.17
TESTES	8.2268E-09	8.2410E-09	-0.17
THYROID	8.2270E-09	8.2420E-09	-0.18
R.B.M.	2.6478E-08	2.6500E-08	-0.08
BONE SURFACE	2.5685E-07	2.5740E-07	-0.21
STOMACH	8.7271E-09	8.7420E-09	-0.17
S.I.	9.4714E-09	9.4860E-09	-0.15
U.L.I.	1.5761E-08	1.5780E-08	-0.12
L.L.I.	3.0328E-08	3.0340E-08	-0.04
SKIN	8.2271E-09	8.2420E-09	-0.18
SPLEEN	8.2294E-09	8.2440E-09	-0.18
THYMUS	8.2281E-09	8.2430E-09	-0.18
UTERUS	8.2268E-09	8.2420E-09	-0.18
ET	7.1226E-05	7.1250E-05	-0.03
LUNG	3.7337E-05	3.7360E-05	-0.06
COLON	2.2060E-08	2.2070E-08	-0.05
ET1	1.2491E-08	1.2510E-08	-0.15
ET2	7.1245E-05	7.1260E-05	-0.02
LN(ET)	1.2377E-04	1.2380E-04	-0.02
BBsec	4.0662E-05	4.0750E-05	-0.22
BBbas	3.8833E-06	3.8920E-06	-0.22
bb	2.7996E-05	2.7940E-05	0.20
AI	6.0571E-05	6.0580E-05	-0.01
LN(TH)	4.2705E-04	4.2710E-04	-0.01
ESOPHAGUS	8.2281E-09	8.2430E-09	-0.18
REMAINDER	**3.5618E-05**	**3.5630E-05**	**-0.03**
C.E.D.	**6.2759E-06**	**6.2790E-06**	**-0.05**
Maximum			**-0.22**

C.10.104.4. Acute Ingestion (f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.5557E-08	2.5600E-08	-0.17
URIN BLADDER	2.5643E-08	2.5680E-08	-0.14
BRAIN	2.5557E-08	2.5600E-08	-0.17
BREAST	2.5556E-08	2.5600E-08	-0.17
GALL BLADDER	2.5556E-08	N/A	N/A
HEART	2.5556E-08	N/A	N/A
KIDNEYS	2.6641E-07	2.6670E-07	-0.11
LIVER	9.9825E-08	9.9960E-08	-0.14
MUSCLE	2.5557E-08	2.5600E-08	-0.17
OVARIES	2.5558E-08	2.5600E-08	-0.16
PANCREAS	2.5556E-08	2.5600E-08	-0.17
TESTES	2.5556E-08	2.5600E-08	-0.17
THYROID	2.5556E-08	2.5600E-08	-0.17
R.B.M.	7.6074E-08	7.6130E-08	-0.07
BONE SURFACE	7.3941E-07	7.4100E-07	-0.21
STOMACH	2.6608E-08	2.6650E-08	-0.16
S.I.	2.8132E-08	2.8170E-08	-0.13
U.L.I.	4.1150E-08	4.1190E-08	-0.10
L.L.I.	7.1302E-08	7.1340E-08	-0.05
SKIN	2.5556E-08	2.5600E-08	-0.17
SPLEEN	2.5556E-08	2.5600E-08	-0.17
THYMUS	2.5556E-08	2.5600E-08	-0.17
UTERUS	2.5556E-08	2.5600E-08	-0.17
ET	2.5556E-08	2.5600E-08	-0.17
LUNG	2.5556E-08	2.5620E-08	-0.25
COLON	5.4189E-08	5.4220E-08	-0.06
ET1	2.5556E-08	2.5600E-08	-0.17
ET2	2.5556E-08	2.5600E-08	-0.17
LN(ET)	2.5556E-08	2.5600E-08	-0.17
BBsec	2.5556E-08	2.5600E-08	-0.17
BBbas	2.5556E-08	2.5600E-08	-0.17
bb	2.5556E-08	2.5600E-08	-0.17
AI	2.5556E-08	2.5600E-08	-0.17
LN(TH)	2.5556E-08	2.5600E-08	-0.17
ESOPHAGUS	2.5556E-08	2.5600E-08	-0.17
REMAINDER	**2.8038E-08**	**2.8080E-08**	**-0.15**
C.E.D.	**4.6161E-08**	**4.6230E-08**	**-0.15**
Maximum			**-0.25**

C.10.104.5. Acute Ingestion (f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.5557E-09	2.5600E-09	-0.17
URIN BLADDER	2.5643E-09	2.5680E-09	-0.14
BRAIN	2.5557E-09	2.5600E-09	-0.17
BREAST	2.5556E-09	2.5600E-09	-0.17
GALL BLADDER	2.5558E-09	N/A	N/A
HEART	2.5556E-09	N/A	N/A
KIDNEYS	2.6641E-08	2.6670E-08	-0.11
LIVER	9.9825E-09	9.9960E-09	-0.14
MUSCLE	2.5557E-09	2.5600E-09	-0.17
OVARIES	2.5575E-09	2.5620E-09	-0.18
PANCREAS	2.5557E-09	2.5600E-09	-0.17
TESTES	2.5556E-09	2.5600E-09	-0.17
THYROID	2.5556E-09	2.5600E-09	-0.17
R.B.M.	7.6074E-09	7.6130E-09	-0.07
BONE SURFACE	7.3941E-08	7.4100E-08	-0.21
STOMACH	3.6070E-09	3.6110E-09	-0.11
S.I.	5.1790E-09	5.1830E-09	-0.08
U.L.I.	1.8434E-08	1.8440E-08	-0.03
L.L.I.	4.9136E-08	4.9140E-08	-0.01
SKIN	2.5556E-09	2.5600E-09	-0.17
SPLEEN	2.5556E-09	2.5600E-09	-0.17
THYMUS	2.5556E-09	2.5600E-09	-0.17
UTERUS	2.5557E-09	2.5600E-09	-0.17
ET	2.5556E-09	2.5600E-09	-0.17
LUNG	2.5556E-09	2.5620E-09	-0.25
COLON	3.1710E-08	3.1700E-08	0.03
ET1	2.5556E-09	2.5600E-09	-0.17
ET2	2.5556E-09	2.5600E-09	-0.17
LN(ET)	2.5556E-09	2.5600E-09	-0.17
BBsec	2.5556E-09	2.5600E-09	-0.17
BBbas	2.5556E-09	2.5600E-09	-0.17
bb	2.5556E-09	2.5600E-09	-0.17
AI	2.5556E-09	2.5600E-09	-0.17
LN(TH)	2.5556E-09	2.5600E-09	-0.17
ESOPHAGUS	2.5556E-09	2.5600E-09	-0.17
REMAINDER	**2.8530E-09**	**2.8580E-09**	**-0.17**
C.E.D.	**7.8874E-09**	**7.8930E-09**	**-0.07**
Maximum			**-0.25**

C.10.105. ^{238}U – Uranium-238

Maximum difference in ***Effective Dose***: **-0.58%** (Inhalation – type "F").
Maximum difference in ***Organ Dose***: **-2.03%** (Inhalation – type "M" – Bone Surface).
Maximum difference excluding ***Respiratory Tract***: **-2.03%**.

C.10.105.1. Acute Inhalation (Type F: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.4288E-07	3.4350E-07	-0.18
URIN BLADDER	3.4407E-07	3.4460E-07	-0.15
BRAIN	3.4282E-07	3.4340E-07	-0.17
BREAST	3.4271E-07	3.4340E-07	-0.20
GALL BLADDER	3.4277E-07	N/A	N/A
HEART	3.4276E-07	N/A	N/A
KIDNEYS	3.5605E-06	3.5660E-06	-0.15
LIVER	1.3386E-06	1.3410E-06	-0.18
MUSCLE	3.4277E-07	3.4340E-07	-0.18
OVARIES	3.4280E-07	3.4410E-07	-0.38
PANCREAS	3.4280E-07	3.4340E-07	-0.17
TESTES	3.4271E-07	3.4440E-07	-0.49
THYROID	3.4277E-07	3.4340E-07	-0.18
R.B.M.	1.0523E-06	1.0570E-06	-0.44
BONE SURFACE	9.9241E-06	1.0120E-05	-1.94
STOMACH	3.4293E-07	3.4360E-07	-0.19
S.I.	3.4327E-07	3.4390E-07	-0.18
U.L.I.	3.4577E-07	3.4640E-07	-0.18
L.L.I.	3.5185E-07	3.5250E-07	-0.18
SKIN	3.4272E-07	3.4340E-07	-0.20
SPLEEN	3.4276E-07	3.4340E-07	-0.19
THYMUS	3.4274E-07	3.4340E-07	-0.19
UTERUS	3.4276E-07	3.4340E-07	-0.19
ET	3.4379E-07	3.4440E-07	-0.18
LUNG	3.5074E-07	3.5170E-07	-0.27
COLON	3.4840E-07	3.4900E-07	-0.17
ET1	4.1143E-07	4.1180E-07	-0.09
ET2	3.4372E-07	3.4440E-07	-0.20
LN(ET)	3.4301E-07	3.4360E-07	-0.17
BBsec	3.5848E-07	3.5910E-07	-0.17
BBbas	3.4307E-07	3.4370E-07	-0.18
bb	3.5815E-07	3.5870E-07	-0.15
AI	3.4334E-07	3.4400E-07	-0.19
LN(TH)	3.4277E-07	3.4340E-07	-0.18
ESOPHAGUS	3.4274E-07	3.4340E-07	-0.19
REMAINDER	**3.7521E-07**	**3.7590E-07**	**-0.18**
C.E.D.	**5.7686E-07**	**5.8020E-07**	**-0.58**
Maximum			**-1.94**

C.10.105.2. Acute Inhalation (Type M: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.3673E-08	8.3850E-08	-0.21
URIN BLADDER	8.4035E-08	8.4100E-08	-0.08
BRAIN	8.3634E-08	8.3810E-08	-0.21
BREAST	8.3633E-08	8.3810E-08	-0.21
GALL BLADDER	8.3631E-08	N/A	N/A
HEART	8.3667E-08	N/A	N/A
KIDNEYS	8.7251E-07	8.7350E-07	-0.11
LIVER	3.2749E-07	3.2830E-07	-0.25
MUSCLE	8.3634E-08	8.3810E-08	-0.21
OVARIES	8.3634E-08	8.4080E-08	-0.53
PANCREAS	8.3647E-08	8.3830E-08	-0.22
TESTES	8.3608E-08	8.4150E-08	-0.64
THYROID	8.3631E-08	8.3810E-08	-0.21
R.B.M.	2.5744E-07	2.5970E-07	-0.87
BONE SURFACE	2.4268E-06	2.4770E-06	-2.03
STOMACH	8.4052E-08	8.4230E-08	-0.21
S.I.	8.4678E-08	8.4860E-08	-0.21
U.L.I.	9.0073E-08	9.0260E-08	-0.21
L.L.I.	1.0304E-07	1.0320E-07	-0.16
SKIN	8.3614E-08	8.3800E-08	-0.22
SPLEEN	8.3638E-08	8.3820E-08	-0.22
THYMUS	8.3647E-08	8.3820E-08	-0.21
UTERUS	8.3622E-08	8.3800E-08	-0.21
ET	1.0779E-05	1.0780E-05	-0.01
LUNG	1.2635E-05	1.2640E-05	-0.04
COLON	9.5679E-08	9.5860E-08	-0.19
ET1	1.5235E-07	1.5220E-07	0.10
ET2	1.0800E-05	1.0800E-05	0.00
LN(ET)	5.5136E-07	5.5170E-07	-0.06
BBsec	2.4081E-05	2.4130E-05	-0.20
BBbas	1.9185E-06	1.9220E-06	-0.18
bb	1.8159E-05	1.8120E-05	0.22
AI	6.7768E-06	6.7780E-06	-0.02
LN(TH)	2.2528E-06	2.2540E-06	-0.05
ESOPHAGUS	8.3647E-08	8.3820E-08	-0.21
REMAINDER	**9.6822E-08**	**9.7020E-08**	**-0.20**
C.E.D.	**1.6485E-06**	**1.6500E-06**	**-0.09**
Maximum			**-2.03**

C.10.105.3. Acute Inhalation (Type S: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.0111E-09	7.9830E-09	0.35
URIN BLADDER	7.8027E-09	7.7990E-09	0.05
BRAIN	7.7631E-09	7.7790E-09	-0.20
BREAST	8.0243E-09	7.9930E-09	0.39
GALL BLADDER	7.8300E-09	N/A	N/A
HEART	8.2571E-09	N/A	N/A
KIDNEYS	9.0583E-08	9.0640E-08	-0.06
LIVER	3.3028E-08	3.3100E-08	-0.22
MUSCLE	7.8728E-09	7.8720E-09	0.01
OVARIES	7.7597E-09	7.8160E-09	-0.72
PANCREAS	7.9367E-09	7.9220E-09	0.19
TESTES	7.7434E-09	7.8110E-09	-0.87
THYROID	7.8499E-09	7.8500E-09	0.00
R.B.M.	2.5894E-08	2.6230E-08	-1.28
BONE SURFACE	2.4203E-07	2.4700E-07	-2.01
STOMACH	8.3931E-09	8.3880E-09	0.06
S.I.	9.0489E-09	9.0640E-09	-0.17
U.L.I.	1.5622E-08	1.5640E-08	-0.12
L.L.I.	3.1311E-08	3.1330E-08	-0.06
SKIN	7.7973E-09	7.8070E-09	-0.12
SPLEEN	7.9391E-09	7.9250E-09	0.18
THYMUS	8.0804E-09	8.0400E-09	0.50
UTERUS	7.7531E-09	7.7720E-09	-0.24
ET	6.4886E-05	6.4900E-05	-0.02
LUNG	3.3761E-05	3.3770E-05	-0.03

COLON	2.2406E-08	2.2420E-08	-0.06
ET1	7.9599E-08	7.9040E-08	0.71
ET2	6.4899E-05	6.4920E-05	-0.03
LN(ET)	1.1645E-04	1.1650E-04	-0.04
BBsec	3.1468E-05	3.1530E-05	-0.20
BBbas	3.3313E-06	3.3370E-06	-0.17
bb	2.5788E-05	2.5730E-05	0.23
AI	5.6996E-05	5.7000E-05	-0.01
LN(TH)	3.9967E-04	3.9980E-04	-0.03
ESOPHAGUS	8.0804E-09	8.0400E-09	0.50
REMAINDER	**3.2447E-05**	**3.2460E-05**	**-0.04**
C.E.D.	**5.6878E-06**	**5.6900E-06**	**-0.04**
Maximum			**-2.01**

C.10.105.4. Acute Ingestion (f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.4055E-08	2.4100E-08	-0.19
URIN BLADDER	2.4141E-08	2.4170E-08	-0.12
BRAIN	2.4050E-08	2.4090E-08	-0.17
BREAST	2.4043E-08	2.4090E-08	-0.20
GALL BLADDER	2.4050E-08	N/A	N/A
HEART	2.4046E-08	N/A	N/A
KIDNEYS	2.4979E-07	2.5010E-07	-0.12
LIVER	9.3901E-08	9.4050E-08	-0.16
MUSCLE	2.4048E-08	2.4090E-08	-0.17
OVARIES	2.4059E-08	2.4150E-08	-0.38
PANCREAS	2.4050E-08	2.4090E-08	-0.17
TESTES	2.4044E-08	2.4160E-08	-0.48
THYROID	2.4047E-08	2.4090E-08	-0.18
R.B.M.	7.3827E-08	7.4130E-08	-0.41
BONE SURFACE	6.9622E-07	7.1000E-07	-1.94
STOMACH	2.5027E-08	2.5070E-08	-0.17
S.I.	2.6468E-08	2.6510E-08	-0.16
U.L.I.	3.8896E-08	3.8940E-08	-0.11
L.L.I.	6.8812E-08	6.8850E-08	-0.06
SKIN	2.4044E-08	2.4090E-08	-0.19
SPLEEN	2.4047E-08	2.4090E-08	-0.18
THYMUS	2.4045E-08	2.4090E-08	-0.19
UTERUS	2.4050E-08	2.4090E-08	-0.17
ET	2.4047E-08	2.4090E-08	-0.18
LUNG	2.4048E-08	2.4110E-08	-0.26
COLON	5.1833E-08	5.1860E-08	-0.05
ET1	2.4047E-08	2.4090E-08	-0.18
ET2	2.4047E-08	2.4090E-08	-0.18
LN(ET)	2.4047E-08	2.4090E-08	-0.18
BBsec	2.4048E-08	2.4090E-08	-0.17
BBbas	2.4048E-08	2.4090E-08	-0.17
bb	2.4048E-08	2.4090E-08	-0.17
AI	2.4048E-08	2.4090E-08	-0.17
LN(TH)	2.4048E-08	2.4090E-08	-0.17
ESOPHAGUS	2.4045E-08	2.4090E-08	-0.19
REMAINDER	**2.6374E-08**	**2.6420E-08**	**-0.17**
C.E.D.	**4.3810E-08**	**4.4040E-08**	**-0.52**
Maximum			**-1.94**

C.10.105.5. Acute Ingestion (f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.4058E-09	2.4100E-09	-0.17
URIN BLADDER	2.4164E-09	2.4190E-09	-0.11
BRAIN	2.4050E-09	2.4090E-09	-0.17
BREAST	2.4044E-09	2.4090E-09	-0.19
GALL BLADDER	2.4069E-09	N/A	N/A
HEART	2.4048E-09	N/A	N/A
KIDNEYS	2.4980E-08	2.5020E-08	-0.16
LIVER	9.3906E-09	9.4060E-09	-0.16
MUSCLE	2.4057E-09	2.4100E-09	-0.18
OVARIES	2.4152E-09	2.4240E-09	-0.36
PANCREAS	2.4057E-09	2.4100E-09	-0.18
TESTES	2.4050E-09	2.4170E-09	-0.50
THYROID	2.4047E-09	2.4090E-09	-0.18
R.B.M.	7.3839E-09	7.4140E-09	-0.41
BONE SURFACE	6.9623E-08	7.1000E-08	-1.94
STOMACH	3.3863E-09	3.3910E-09	-0.14
S.I.	4.8689E-09	4.8730E-09	-0.08
U.L.I.	1.7526E-08	1.7530E-08	-0.02
L.L.I.	4.7987E-08	4.7990E-08	-0.01
SKIN	2.4047E-09	2.4090E-09	-0.18
SPLEEN	2.4053E-09	2.4090E-09	-0.15
THYMUS	2.4046E-09	2.4090E-09	-0.18
UTERUS	2.4081E-09	2.4120E-09	-0.16
ET	2.4047E-09	2.4090E-09	-0.18
LUNG	2.4049E-09	2.4110E-09	-0.25
COLON	3.0698E-08	3.0690E-08	0.03
ET1	2.4047E-09	2.4090E-09	-0.18
ET2	2.4047E-09	2.4090E-09	-0.18
LN(ET)	2.4047E-09	2.4090E-09	-0.18
BBsec	2.4049E-09	2.4090E-09	-0.17
BBbas	2.4049E-09	2.4090E-09	-0.17
bb	2.4049E-09	2.4090E-09	-0.17
AI	2.4049E-09	2.4090E-09	-0.17
LN(TH)	2.4049E-09	2.4090E-09	-0.17
ESOPHAGUS	2.4046E-09	2.4090E-09	-0.18
REMAINDER	**2.6844E-09**	**2.6890E-09**	**-0.17**
C.E.D.	**7.5533E-09**	**7.5740E-09**	**-0.27**
Maximum			**-1.94**

C.10.106. ^{239}U – Uranium-239

Maximum difference in ***Effective Dose***: **-0.11%** (Inhalation – type "M"/"S").
Maximum difference in ***Organ Dose***: **+0.71%** (Inhalation – type "S" – LN (TH)).
Maximum difference excluding ***Respiratory Tract***: **+0.09%**.

C.10.106.1. Acute Inhalation (Type F: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.08E-13	5.08E-13	0.04
URIN BLADDER	2.22E-11	2.22E-11	0.03
BRAIN	4.50E-13	4.50E-13	0.04
BREAST	3.99E-13	3.99E-13	0.04
GALL BLADDER	5.49E-13	N/A	N/A
HEART	4.52E-13	N/A	N/A

KIDNEYS	1.19E-11	1.18E-11	0.08
LIVER	6.13E-13	6.13E-13	0.02
MUSCLE	5.07E-13	5.07E-13	0.05
OVARIES	6.86E-13	6.86E-13	0.03
PANCREAS	5.99E-13	5.99E-13	0.04
TESTES	4.10E-13	4.09E-13	0.03
THYROID	4.55E-13	4.54E-13	0.05
R.B.M.	1.33E-12	1.33E-12	0.05
BONE SURFACE	5.63E-12	5.63E-12	0.00
STOMACH	2.95E-11	2.95E-11	0.00
S.I.	1.04E-11	1.04E-11	0.04
U.L.I.	8.19E-12	8.19E-12	0.02
L.L.I.	1.26E-11	1.26E-11	0.03
SKIN	4.09E-13	4.09E-13	0.04
SPLEEN	5.45E-13	5.45E-13	0.05
THYMUS	4.78E-13	4.77E-13	0.05
UTERUS	5.97E-13	5.97E-13	0.03
ET	3.78E-10	3.78E-10	0.00
LUNG	1.95E-11	1.96E-11	-0.39
COLON	1.01E-11	1.01E-11	0.01
ET1	5.96E-08	5.96E-08	0.02
ET2	3.19E-10	3.19E-10	-0.01
LN(ET)	3.26E-11	3.26E-11	0.02
BBsec	5.39E-11	5.40E-11	-0.19
BBbas	4.41E-11	4.42E-11	-0.2
bb	7.24E-12	7.23E-12	0.18
AI	2.42E-12	2.42E-12	-0.01
LN(TH)	4.92E-13	4.92E-13	0.04
ESOPHAGUS	4.78E-13	4.77E-13	0.05
REMAINDER	**1.89E-10**	**1.89E-10**	**0.01**
C.E.D.	**1.81E-11**	**1.81E-11**	**-0.03**
Maximum			**-0.39**

C.10.106.2. Acute Inhalation (Type M: f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.33E-13	1.33E-13	0.00
URIN BLADDER	1.84E-13	1.84E-13	0.02
BRAIN	7.50E-14	7.50E-14	0.02
BREAST	8.31E-14	8.31E-14	0.00
GALL BLADDER	2.53E-13	N/A	N/A
HEART	1.77E-13	N/A	N/A
KIDNEYS	1.68E-13	1.68E-13	0.05
LIVER	1.25E-13	1.25E-13	0.00
MUSCLE	1.75E-13	1.75E-13	0.02
OVARIES	5.28E-13	5.28E-13	0.01
PANCREAS	3.23E-13	3.23E-13	0.02
TESTES	3.68E-14	3.68E-14	0.02
THYROID	9.40E-14	9.40E-14	0.02
R.B.M.	1.72E-13	1.72E-13	0.02
BONE SURFACE	2.84E-13	2.84E-13	0.03
STOMACH	4.99E-11	4.99E-11	0.01
S.I.	1.76E-11	1.76E-11	0.01
U.L.I.	1.53E-11	1.53E-11	0.01
L.L.I.	2.56E-11	2.56E-11	0.00
SKIN	5.81E-14	5.81E-14	0.02
SPLEEN	2.22E-13	2.22E-13	-0.01
THYMUS	1.65E-13	1.65E-13	0.02
UTERUS	2.84E-13	2.84E-13	0.03
ET	5.86E-10	5.86E-10	0.00
LUNG	9.92E-11	9.96E-11	-0.37
COLON	1.97E-11	1.97E-11	0.04
ET1	5.96E-08	5.96E-08	0.02
ET2	5.28E-10	5.28E-10	0.00
LN(ET)	3.51E-11	3.51E-11	0.03
BBsec	2.75E-10	2.75E-10	-0.19
BBbas	2.12E-10	2.13E-10	-0.20
bb	4.34E-11	4.33E-11	0.22
AI	1.11E-11	1.11E-11	0.06
LN(TH)	1.43E-12	1.42E-12	0.71
ESOPHAGUS	1.65E-13	1.65E-13	0.02
REMAINDER	**2.93E-10**	**2.94E-10**	**-0.01**
C.E.D.	**3.51E-11**	**3.51E-11**	**-0.11**
Maximum			**-0.37**

C.10.106.3. Acute Inhalation (Type S: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.33E-13	1.33E-13	0.00
URIN BLADDER	1.84E-13	1.84E-13	0.02
BRAIN	7.50E-14	7.50E-14	0.02
BREAST	8.31E-14	8.31E-14	0.00
GALL BLADDER	2.53E-13	N/A	N/A
HEART	1.77E-13	N/A	N/A
KIDNEYS	1.68E-13	1.68E-13	0.05
LIVER	1.25E-13	1.25E-13	0.00
MUSCLE	1.75E-13	1.75E-13	0.02
OVARIES	5.28E-13	5.28E-13	0.01
PANCREAS	3.23E-13	3.23E-13	0.02
TESTES	3.68E-14	3.68E-14	0.02
THYROID	9.40E-14	9.40E-14	0.02
R.B.M.	1.72E-13	1.72E-13	0.02
BONE SURFACE	2.84E-13	2.84E-13	0.03
STOMACH	4.99E-11	4.99E-11	0.01
S.I.	1.76E-11	1.76E-11	0.01
U.L.I.	1.53E-11	1.53E-11	0.01
L.L.I.	2.56E-11	2.56E-11	0.00
SKIN	5.81E-14	5.81E-14	0.02
SPLEEN	2.22E-13	2.22E-13	-0.01
THYMUS	1.65E-13	1.65E-13	0.02
UTERUS	2.84E-13	2.84E-13	0.03
ET	5.86E-10	5.86E-10	0.00
LUNG	9.92E-11	9.96E-11	-0.37
COLON	1.97E-11	1.97E-11	0.04
ET1	5.96E-08	5.96E-08	0.02
ET2	5.28E-10	5.28E-10	0.00
LN(ET)	3.51E-11	3.51E-11	0.03
BBsec	2.75E-10	2.75E-10	-0.19
BBbas	2.12E-10	2.13E-10	-0.20
bb	4.34E-11	4.33E-11	0.22
AI	1.11E-11	1.11E-11	0.06
LN(TH)	1.43E-12	1.42E-12	0.71
ESOPHAGUS	1.65E-13	1.65E-13	0.02
REMAINDER	**2.93E-10**	**2.94E-10**	**-0.01**
C.E.D.	**3.51E-11**	**3.51E-11**	**-0.11**
Maximum			**0.71**

C.10.106.4. Acute Ingestion (f_1 = 0.02)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.37E-13	2.37E-13	0.03
URIN BLADDER	5.88E-13	5.88E-13	0.01
BRAIN	5.34E-15	5.34E-15	0.09
BREAST	4.19E-14	4.19E-14	0.03
GALL BLADDER	6.63E-13	N/A	N/A
HEART	1.64E-13	N/A	N/A
KIDNEYS	8.72E-13	8.72E-13	0.06

LIVER	2.20E-13	2.20E-13	0.00
MUSCLE	2.12E-13	2.12E-13	0.01
OVARIES	1.36E-12	1.36E-12	0.02
PANCREAS	9.28E-13	9.28E-13	0.02
TESTES	9.30E-14	9.30E-14	0.03
THYROID	7.29E-15	7.28E-15	0.08
R.B.M.	3.05E-13	3.05E-13	0.00
BONE SURFACE	5.71E-13	5.71E-13	0.01
STOMACH	1.76E-10	1.76E-10	0.01
S.I.	5.93E-11	5.93E-11	0.02
U.L.I.	4.06E-11	4.06E-11	0.03
L.L.I.	6.07E-11	6.07E-11	0.03
SKIN	6.57E-14	6.57E-14	0.03
SPLEEN	5.90E-13	5.90E-13	0.01
THYMUS	2.76E-14	2.76E-14	0.04
UTERUS	7.67E-13	7.67E-13	0.03
ET	7.29E-15	7.28E-15	0.08
LUNG	8.48E-14	8.49E-14	-0.08
COLON	4.93E-11	4.93E-11	0.04
ET1	7.29E-15	7.28E-15	0.08
ET2	7.29E-15	7.28E-15	0.08
LN(ET)	7.29E-15	7.28E-15	0.08
BBsec	8.48E-14	8.48E-14	0.01
BBbas	8.48E-14	8.48E-14	0.01
bb	8.48E-14	8.48E-14	0.01
AI	8.48E-14	8.48E-14	0.01
LN(TH)	8.48E-14	8.48E-14	0.01
ESOPHAGUS	2.76E-14	2.76E-14	0.04
REMAINDER	**1.44E-12**	**1.44E-12**	**-0.04**
C.E.D.	**2.75E-11**	**2.75E-11**	**0.00**
Maximum			**0.09**

C.10.106.5. Acute Ingestion (f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.29E-13	2.29E-13	0.02
URIN BLADDER	4.12E-13	4.12E-13	0.02
BRAIN	8.12E-16	8.11E-16	0.07
BREAST	3.78E-14	3.78E-14	0.02
GALL BLADDER	6.62E-13	N/A	N/A
HEART	1.59E-13	N/A	N/A
KIDNEYS	3.98E-13	3.98E-13	0.02
LIVER	2.07E-13	2.07E-13	0.01
MUSCLE	2.09E-13	2.09E-13	0.04
OVARIES	1.37E-12	1.37E-12	-0.01
PANCREAS	9.23E-13	9.23E-13	0.01
TESTES	8.99E-14	8.98E-14	0.02
THYROID	2.75E-15	2.75E-15	0.03
R.B.M.	2.67E-13	2.67E-13	0.01
BONE SURFACE	2.86E-13	2.86E-13	0.02
STOMACH	1.76E-10	1.76E-10	0.00
S.I.	5.95E-11	5.95E-11	0.03
U.L.I.	4.11E-11	4.11E-11	0.01
L.L.I.	6.17E-11	6.17E-11	0.02
SKIN	6.20E-14	6.20E-14	0.02
SPLEEN	5.84E-13	5.84E-13	0.01
THYMUS	2.32E-14	2.32E-14	0.00
UTERUS	7.70E-13	7.69E-13	0.02
ET	2.75E-15	2.75E-15	0.03
LUNG	8.01E-14	8.02E-14	-0.09
COLON	5.00E-11	5.00E-11	0.03
ET1	2.75E-15	2.75E-15	0.03
ET2	2.75E-15	2.75E-15	0.03
LN(ET)	2.75E-15	2.75E-15	0.03
BBsec	8.01E-14	8.01E-14	0.00
BBbas	8.01E-14	8.01E-14	0.00
bb	8.01E-14	8.01E-14	0.00
AI	8.01E-14	8.01E-14	0.00
LN(TH)	8.01E-14	8.01E-14	0.00
ESOPHAGUS	2.32E-14	2.32E-14	0.00
REMAINDER	**1.44E-12**	**1.44E-12**	**-0.06**
C.E.D.	**2.76E-11**	**2.76E-11**	**0.00**
Maximum			**-0.09**

C.10.107. ^{88}Y – Yttrium-88

Maximum difference in ***Effective Dose***: **-0.08%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.16%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.08%**.

C.10.107.1. Acute Inhalation (Type M: f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.94E-09	2.94E-09	-0.04
URIN BLADDER	8.81E-10	8.82E-10	-0.04
BRAIN	8.92E-10	8.92E-10	-0.05
BREAST	1.80E-09	1.80E-09	-0.04
GALL BLADDER	2.44E-09	N/A	N/A
HEART	2.99E-09	N/A	N/A
KIDNEYS	1.79E-09	1.79E-09	-0.02
LIVER	4.58E-09	4.58E-09	-0.06
MUSCLE	1.40E-09	1.40E-09	-0.01
OVARIES	2.05E-09	2.05E-09	-0.05
PANCREAS	2.17E-09	2.17E-09	-0.03
TESTES	4.90E-10	4.91E-10	-0.05
THYROID	1.18E-09	1.18E-09	-0.08
R.B.M.	3.01E-09	3.01E-09	-0.05
BONE SURFACE	2.85E-09	2.85E-09	-0.04
STOMACH	1.61E-09	1.61E-09	-0.04
S.I.	1.99E-09	1.99E-09	-0.05
U.L.I.	2.58E-09	2.59E-09	-0.03
L.L.I.	3.56E-09	3.56E-09	-0.02
SKIN	8.47E-10	8.48E-10	-0.05
SPLEEN	1.61E-09	1.62E-09	-0.05
THYMUS	2.15E-09	2.15E-09	-0.04
UTERUS	1.23E-09	1.23E-09	-0.04
ET	2.12E-08	2.12E-08	-0.01
LUNG	6.77E-09	6.78E-09	-0.14
COLON	3.01E-09	3.01E-09	0.00
ET1	2.64E-08	2.64E-08	-0.01
ET2	2.12E-08	2.12E-08	0.01
LN(ET)	2.12E-08	2.12E-08	-0.01
BBsec	6.78E-09	6.78E-09	-0.05

BBbas	6.76E-09	6.76E-09	-0.04
bb	6.66E-09	6.66E-09	-0.03
AI	6.87E-09	6.87E-09	-0.03
LN(TH)	6.62E-09	6.63E-09	-0.03
ESOPHAGUS	2.15E-09	2.15E-09	-0.04
REMAINDER	**1.13E-08**	**1.13E-08**	**-0.01**
C.E.D.	**3.27E-09**	**3.27E-09**	**-0.04**
Maximum			**-0.14**

C.10.107.2. Acute Inhalation (Type S: f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.02E-09	2.02E-09	-0.01
URIN BLADDER	4.19E-10	4.19E-10	-0.02
BRAIN	2.74E-10	2.74E-10	-0.04
BREAST	2.17E-09	2.17E-09	-0.06
GALL BLADDER	1.08E-09	N/A	N/A
HEART	3.54E-09	N/A	N/A
KIDNEYS	8.97E-10	8.97E-10	-0.03
LIVER	1.84E-09	1.85E-09	-0.02
MUSCLE	1.04E-09	1.04E-09	-0.05
OVARIES	1.25E-09	1.25E-09	-0.01
PANCREAS	1.54E-09	1.54E-09	-0.04
TESTES	1.46E-10	1.46E-10	-0.04
THYROID	9.55E-10	9.55E-10	-0.04
R.B.M.	1.33E-09	1.33E-09	-0.05
BONE SURFACE	9.72E-10	9.72E-10	-0.03
STOMACH	1.39E-09	1.39E-09	-0.04
S.I.	1.21E-09	1.21E-09	0.01
U.L.I.	1.82E-09	1.82E-09	-0.02
L.L.I.	2.85E-09	2.85E-09	0.00
SKIN	5.72E-10	5.73E-10	-0.04
SPLEEN	1.56E-09	1.56E-09	-0.03
THYMUS	2.54E-09	2.54E-09	-0.05
UTERUS	6.00E-10	6.00E-10	-0.02
ET	2.18E-08	2.18E-08	0.01
LUNG	1.01E-08	1.01E-08	-0.16
COLON	2.26E-09	2.26E-09	0.03
ET1	2.70E-08	2.70E-08	0.01
ET2	2.18E-08	2.18E-08	-0.01
LN(ET)	2.18E-08	2.18E-08	0.01
BBsec	1.01E-08	1.01E-08	-0.08
BBbas	1.00E-08	1.00E-08	0.00
bb	9.92E-09	9.92E-09	-0.04
AI	1.03E-08	1.03E-08	-0.07
LN(TH)	9.88E-09	9.88E-09	-0.04
ESOPHAGUS	2.54E-09	2.54E-09	-0.05
REMAINDER	**1.14E-08**	**1.14E-08**	**0.04**
C.E.D.	**3.04E-09**	**3.04E-09**	**-0.08**
Maximum			**-0.16**

C.10.107.3. Acute Ingestion (f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.68E-10	1.68E-10	0.02
URIN BLADDER	7.94E-10	7.94E-10	-0.01
BRAIN	3.72E-12	3.72E-12	-0.02
BREAST	4.23E-11	4.23E-11	0.01
GALL BLADDER	7.40E-10	N/A	N/A
HEART	8.41E-11	N/A	N/A
KIDNEYS	3.56E-10	3.56E-10	0.01
LIVER	2.47E-10	2.47E-10	0.00
MUSCLE	3.07E-10	3.07E-10	0.02
OVARIES	2.53E-09	2.53E-09	0.00
PANCREAS	3.12E-10	3.12E-10	0.00
TESTES	2.54E-10	2.54E-10	0.01
THYROID	1.05E-11	1.05E-11	-0.04
R.B.M.	4.67E-10	4.67E-10	0.00
BONE SURFACE	2.07E-10	2.07E-10	0.01
STOMACH	7.07E-10	7.07E-10	-0.01
S.I.	2.18E-09	2.18E-09	0.01
U.L.I.	3.51E-09	3.51E-09	-0.01
L.L.I.	6.19E-09	6.19E-09	0.00
SKIN	1.25E-10	1.25E-10	0.01
SPLEEN	2.52E-10	2.52E-10	-0.01
THYMUS	3.26E-11	3.26E-11	0.00
UTERUS	1.09E-09	1.09E-09	0.00
ET	1.05E-11	1.05E-11	-0.04
LUNG	5.85E-11	5.86E-11	-0.10
COLON	4.67E-09	4.67E-09	0.03
ET1	1.05E-11	1.05E-11	-0.04
ET2	1.05E-11	1.05E-11	-0.04
LN(ET)	1.05E-11	1.05E-11	-0.04
BBsec	5.85E-11	5.85E-11	-0.01
BBbas	5.85E-11	5.85E-11	-0.01
bb	5.85E-11	5.85E-11	-0.01
AI	5.85E-11	5.85E-11	-0.01
LN(TH)	5.85E-11	5.85E-11	-0.01
ESOPHAGUS	3.26E-11	3.26E-11	0.00
REMAINDER	**3.34E-10**	**3.34E-10**	**-0.06**
C.E.D.	**1.29E-09**	**1.29E-09**	**0.02**
Maximum			**-0.10**

C.10.108. ^{90}Y – Yttrium-90

Maximum difference in ***Effective Dose***: **-0.09%** (Inhalation – type "M").
Maximum difference in ***Organ Dose***: **-0.30%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.13%**.

C.10.108.1. Acute Inhalation (Type M: f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.9590E-12	3.9560E-12	0.08
URIN BLADDER	1.8620E-11	1.8620E-11	0.00
BRAIN	3.9590E-12	3.9560E-12	0.08
BREAST	3.9590E-12	3.9560E-12	0.08
GALL BLADDER	3.9590E-12	N/A	N/A

HEART	3.9590E-12	N/A	N/A
KIDNEYS	3.9590E-12	3.9560E-12	0.08
LIVER	1.1246E-10	1.1250E-10	-0.04
MUSCLE	3.9591E-12	3.9560E-12	0.08
OVARIES	3.9596E-12	3.9560E-12	0.09
PANCREAS	3.9590E-12	3.9560E-12	0.08
TESTES	3.9590E-12	3.9560E-12	0.08
THYROID	3.9590E-12	3.9560E-12	0.08
R.B.M.	1.1441E-10	1.1440E-10	0.01
BONE SURFACE	1.1441E-10	1.1440E-10	0.01
STOMACH	4.2517E-10	4.2520E-10	-0.01
S.I.	1.0132E-09	1.0130E-09	0.02
U.L.I.	5.3898E-09	5.3900E-09	0.00
L.L.I.	1.2546E-08	1.2550E-08	-0.03
SKIN	3.9590E-12	3.9560E-12	0.08
SPLEEN	3.9590E-12	3.9560E-12	0.08
THYMUS	3.9590E-12	3.9560E-12	0.08
UTERUS	3.9590E-12	3.9560E-12	0.08
ET	2.2515E-09	2.2510E-09	0.02
LUNG	4.5106E-09	4.5240E-09	-0.30
COLON	8.4844E-09	8.4820E-09	0.03
ET1	1.4016E-06	1.4010E-06	0.04
ET2	8.5156E-10	8.5160E-10	0.00
LN(ET)	6.3294E-12	6.3270E-12	0.04
BBsec	8.9168E-09	8.9320E-09	-0.17
BBbas	8.3834E-09	8.3970E-09	-0.16
bb	2.8104E-09	2.8090E-09	0.05
AI	2.0849E-09	2.0850E-09	0.00
LN(TH)	1.5315E-11	1.5320E-11	-0.03
ESOPHAGUS	3.9590E-12	3.9560E-12	0.08
REMAINDER	**2.6054E-11**	**2.6070E-11**	**-0.06**
C.E.D.	**1.6346E-09**	**1.6360E-09**	**-0.09**
Maximum			**-0.30**

C.10.108.2. Acute Inhalation (Type S: f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.6727E-14	4.6690E-14	0.08
URIN BLADDER	2.1974E-13	2.1970E-13	0.02
BRAIN	4.6719E-14	4.6680E-14	0.08
BREAST	4.6727E-14	4.6690E-14	0.08
GALL BLADDER	4.6761E-14	N/A	N/A
HEART	4.6756E-14	N/A	N/A
KIDNEYS	4.6719E-14	4.6680E-14	0.08
LIVER	1.3271E-12	1.3270E-12	0.01
MUSCLE	4.6829E-14	4.6790E-14	0.08
OVARIES	4.7324E-14	4.7280E-14	0.09
PANCREAS	4.6727E-14	4.6690E-14	0.08
TESTES	4.6719E-14	4.6680E-14	0.08
THYROID	4.6719E-14	4.6680E-14	0.08
R.B.M.	1.3502E-12	1.3500E-12	0.01
BONE SURFACE	1.3502E-12	1.3500E-12	0.01
STOMACH	4.4427E-10	4.4430E-10	-0.01
S.I.	1.0643E-09	1.0640E-09	0.03
U.L.I.	5.6304E-09	5.6310E-09	-0.01
L.L.I.	1.3111E-08	1.3110E-08	0.01
SKIN	4.6722E-14	4.6680E-14	0.09
SPLEEN	4.6729E-14	4.6690E-14	0.08
THYMUS	4.6720E-14	4.6680E-14	0.09
UTERUS	4.6733E-14	4.6690E-14	0.09
ET	2.3072E-09	2.3070E-09	0.01
LUNG	5.0830E-09	5.0980E-09	-0.29
COLON	8.8654E-09	8.8620E-09	0.04
ET1	1.4016E-06	1.4010E-06	0.04
ET2	9.0747E-10	9.0750E-10	0.00
LN(ET)	2.7525E-12	2.7530E-12	-0.02
BBsec	1.0045E-08	1.0060E-08	-0.15
BBbas	9.4444E-09	9.4610E-09	-0.18
bb	3.1680E-09	3.1660E-09	0.06
AI	2.3516E-09	2.3520E-09	-0.02
LN(TH)	1.3123E-11	1.3130E-11	-0.05
ESOPHAGUS	4.6720E-14	4.6680E-14	0.09
REMAINDER	**2.3316E-11**	**2.3330E-11**	**-0.06**
C.E.D.	**1.7286E-09**	**1.7300E-09**	**-0.08**
Maximum			**-0.29**

C.10.108.3. Acute Ingestion (f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.2867E-14	1.2850E-14	0.13
URIN BLADDER	6.0543E-14	6.0530E-14	0.02
BRAIN	1.2867E-14	1.2850E-14	0.13
BREAST	1.2867E-14	1.2850E-14	0.13
GALL BLADDER	1.2968E-14	N/A	N/A
HEART	1.2867E-14	N/A	N/A
KIDNEYS	1.2868E-14	1.2860E-14	0.06
LIVER	3.6549E-13	3.6550E-13	0.00
MUSCLE	1.2920E-14	1.2910E-14	0.08
OVARIES	1.4319E-14	1.4310E-14	0.06
PANCREAS	1.2885E-14	1.2870E-14	0.12
TESTES	1.2868E-14	1.2860E-14	0.06
THYROID	1.2867E-14	1.2850E-14	0.13
R.B.M.	3.7187E-13	3.7190E-13	-0.01
BONE SURFACE	3.7189E-13	3.7190E-13	0.00
STOMACH	1.0657E-09	1.0660E-09	-0.03
S.I.	2.5534E-09	2.5530E-09	0.02
U.L.I.	1.3506E-08	1.3510E-08	-0.03
L.L.I.	3.1453E-08	3.1450E-08	0.01
SKIN	1.2871E-14	1.2860E-14	0.09
SPLEEN	1.2869E-14	1.2860E-14	0.07
THYMUS	1.2867E-14	1.2850E-14	0.13
UTERUS	1.2902E-14	1.2890E-14	0.09
ET	1.2867E-14	1.2850E-14	0.13
LUNG	1.2867E-14	1.2870E-14	-0.02
COLON	2.1267E-08	2.1260E-08	0.03
ET1	1.2867E-14	1.2850E-14	0.13
ET2	1.2867E-14	1.2850E-14	0.13
LN(ET)	1.2867E-14	1.2850E-14	0.13
BBsec	1.2867E-14	1.2850E-14	0.13
BBbas	1.2867E-14	1.2850E-14	0.13
bb	1.2867E-14	1.2850E-14	0.13
AI	1.2867E-14	1.2850E-14	0.13
LN(TH)	1.2867E-14	1.2850E-14	0.13
ESOPHAGUS	1.2867E-14	1.2850E-14	0.13
REMAINDER	**5.3141E-11**	**5.3180E-11**	**-0.07**
C.E.D.	**2.6827E-09**	**2.6820E-09**	**0.03**
Maximum			**0.13**

C.10.109. ^{91}Y – Yttrium-91

Maximum difference in ***Effective Dose***: **-0.19%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.26%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **+0.17%**.

C.10.110.1. Acute Inhalation (Type M: f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	5.0496E-11	5.042E-11	0.15
URIN BLADDER	6.3533E-11	6.345E-11	0.13
BRAIN	4.8740E-11	4.866E-11	0.16
BREAST	4.9722E-11	4.964E-11	0.17
GALL BLADDER	5.0073E-11	N/A	N/A
HEART	5.0826E-11	N/A	N/A
KIDNEYS	4.9516E-11	4.943E-11	0.17
LIVER	2.3810E-09	2.381E-09	0.00
MUSCLE	4.9297E-11	4.922E-11	0.16
OVARIES	5.0228E-11	5.015E-11	0.16
PANCREAS	4.9897E-11	4.982E-11	0.15
TESTES	4.8454E-11	4.837E-11	0.17
THYROID	4.9066E-11	4.899E-11	0.16
R.B.M.	2.4218E-09	2.421E-09	0.03
BONE SURFACE	2.4212E-09	2.421E-09	0.01
STOMACH	3.3425E-10	3.342E-10	0.01
S.I.	7.6037E-10	7.603E-10	0.01
U.L.I.	4.3751E-09	4.375E-09	0.00
L.L.I.	1.2591E-08	1.259E-08	0.01
SKIN	4.8764E-11	4.868E-11	0.17
SPLEEN	4.9504E-11	4.942E-11	0.17
THYMUS	5.0069E-11	4.999E-11	0.16
UTERUS	4.9232E-11	4.915E-11	0.17
ET	5.2385E-09	5.238E-09	0.01
LUNG	3.0999E-08	3.108E-08	-0.26
COLON	7.9279E-09	7.924E-09	0.05
ET1	1.8253E-06	1.825E-06	0.02
ET2	3.4196E-09	3.420E-09	-0.01
LN(ET)	4.0816E-10	4.080E-10	0.04
BBsec	5.7058E-08	5.716E-08	-0.18
BBbas	5.2358E-08	5.245E-08	-0.18
bb	2.1006E-08	2.099E-08	0.08
AI	1.7372E-08	1.737E-08	0.01
LN(TH)	1.2626E-09	1.263E-09	-0.03
ESOPHAGUS	5.0069E-11	4.999E-11	0.16
REMAINDER	**6.6604E-11**	**6.653E-11**	**0.11**
C.E.D.	**5.1697E-09**	**5.179E-09**	**-0.18**
Maximum			**-0.26**

C.10.109.2. Acute Inhalation (Type S: f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.6137E-12	2.612E-12	0.07
URIN BLADDER	1.6013E-12	1.600E-12	0.08
BRAIN	1.0824E-12	1.081E-12	0.13
BREAST	2.7322E-12	2.731E-12	0.04
GALL BLADDER	1.8873E-12	N/A	N/A
HEART	3.9490E-12	N/A	N/A
KIDNEYS	1.6750E-12	1.674E-12	0.06
LIVER	4.2176E-11	4.217E-11	0.01
MUSCLE	1.8220E-12	1.820E-12	0.11
OVARIES	2.4868E-12	2.485E-12	0.07
PANCREAS	2.2319E-12	2.230E-12	0.09
TESTES	9.9659E-13	9.952E-13	0.14
THYROID	1.6680E-12	1.666E-12	0.12
R.B.M.	4.2519E-11	4.251E-11	0.02
BONE SURFACE	4.2144E-11	4.213E-11	0.03
STOMACH	3.0490E-10	3.049E-10	0.00
S.I.	7.5761E-10	7.576E-10	0.00
U.L.I.	4.5462E-09	4.546E-09	0.00
L.L.I.	1.3177E-08	1.318E-08	-0.02
SKIN	1.3444E-12	1.343E-12	0.10
SPLEEN	2.2305E-12	2.229E-12	0.07
THYMUS	3.0916E-12	3.090E-12	0.05
UTERUS	1.5881E-12	1.587E-12	0.07
ET	6.6351E-09	6.635E-09	0.00
LUNG	4.2057E-08	4.216E-08	-0.24
COLON	8.2783E-09	8.275E-09	0.04
ET1	1.8252E-06	1.825E-06	0.01
ET2	4.8188E-09	4.819E-09	0.00
LN(ET)	7.4578E-10	7.456E-10	0.02
BBsec	7.3199E-08	7.332E-08	-0.17
BBbas	6.7415E-08	6.752E-08	-0.16
bb	3.0145E-08	3.013E-08	0.05
AI	2.5838E-08	2.584E-08	-0.01
LN(TH)	2.3492E-09	2.349E-09	0.01
ESOPHAGUS	3.0916E-12	3.090E-12	0.05
REMAINDER	**2.0752E-11**	**2.076E-11**	**-0.04**
C.E.D.	**6.0865E-09**	**6.098E-09**	**-0.19**
Maximum			**-0.24**

C.10.109.3. Acute Ingestion (f_1 = 0.0001)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	3.4458E-13	3.444E-13	0.05
URIN BLADDER	1.2550E-12	1.255E-12	0.00
BRAIN	1.2120E-13	1.210E-13	0.17
BREAST	1.7261E-13	1.724E-13	0.12
GALL BLADDER	1.1243E-12	N/A	N/A
HEART	2.2861E-13	N/A	N/A
KIDNEYS	6.0632E-13	6.061E-13	0.04
LIVER	6.1668E-12	6.165E-12	0.03
MUSCLE	5.4192E-13	5.417E-13	0.04
OVARIES	3.6873E-12	3.687E-12	0.01
PANCREAS	5.5350E-13	5.533E-13	0.04
TESTES	4.6813E-13	4.679E-13	0.05
THYROID	1.2987E-13	1.297E-13	0.13
R.B.M.	6.5810E-12	6.580E-12	0.02
BONE SURFACE	6.2144E-12	6.213E-12	0.02
STOMACH	6.9447E-10	6.945E-10	0.00
S.I.	1.7330E-09	1.733E-09	0.00
U.L.I.	1.0408E-08	1.041E-08	-0.02
L.L.I.	3.0173E-08	3.017E-08	0.01

SKIN	2.8695E-13	2.868E-13	0.05
SPLEEN	4.6014E-13	4.599E-13	0.05
THYMUS	1.5906E-13	1.589E-13	0.10
UTERUS	1.6688E-12	1.669E-12	-0.01
ET	1.2987E-13	1.297E-13	0.13
LUNG	1.9438E-13	1.944E-13	-0.01
COLON	1.8955E-08	1.895E-08	0.03
ET1	1.2987E-13	1.297E-13	0.13
ET2	1.2987E-13	1.297E-13	0.13
LN(ET)	1.2987E-13	1.297E-13	0.13
BBsec	1.9438E-13	1.942E-13	0.09
BBbas	1.9438E-13	1.942E-13	0.09
bb	1.9438E-13	1.942E-13	0.09
AI	1.9438E-13	1.942E-13	0.09
LN(TH)	1.9438E-13	1.942E-13	0.09
ESOPHAGUS	1.5906E-13	1.589E-13	0.10
REMAINDER	**3.6572E-11**	**3.660E-11**	**-0.08**
C.E.D.	**2.3618E-09**	**2.361E-09**	**0.03**
Maximum			**0.17**

C.10.110. ^{169}Yb – Ytterbium-169

Maximum difference in ***Effective Dose***: **-0.27%** (Inhalation – type "S").
Maximum difference in ***Organ Dose***: **-0.30%** (Inhalation – type "M" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **±0.06%**.

C.10.110.1. Acute Inhalation (Type M: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.37E-10	1.37E-10	-0.01
URIN BLADDER	7.58E-11	7.58E-11	-0.01
BRAIN	3.15E-11	3.15E-11	-0.03
BREAST	1.03E-10	1.03E-10	-0.02
GALL BLADDER	1.04E-10	N/A	N/A
HEART	2.03E-10	N/A	N/A
KIDNEYS	1.24E-10	1.25E-10	-0.02
LIVER	1.80E-10	1.80E-10	-0.04
MUSCLE	8.27E-11	8.27E-11	-0.02
OVARIES	2.13E-10	2.13E-10	-0.03
PANCREAS	1.11E-10	1.11E-10	-0.02
TESTES	2.01E-11	2.01E-11	0.00
THYROID	5.38E-11	5.38E-11	-0.01
R.B.M.	3.86E-10	3.86E-10	-0.02
BONE SURFACE	3.30E-09	3.30E-09	-0.03
STOMACH	1.65E-10	1.65E-10	-0.01
S.I.	3.40E-10	3.40E-10	0.00
U.L.I.	1.17E-09	1.17E-09	-0.02
L.L.I.	3.05E-09	3.05E-09	0.00
SKIN	3.29E-11	3.29E-11	-0.02
SPLEEN	1.95E-10	1.95E-10	-0.04
THYMUS	1.39E-10	1.39E-10	-0.04
UTERUS	1.02E-10	1.02E-10	-0.01
ET	6.17E-09	6.17E-09	-0.01
LUNG	1.37E-08	1.38E-08	-0.30
COLON	1.98E-09	1.98E-09	0.06
ET1	1.17E-06	1.17E-06	0.03
ET2	5.01E-09	5.01E-09	-0.01
LN(ET)	2.82E-09	2.82E-09	0.02
BBsec	3.62E-08	3.63E-08	-0.23
BBbas	2.25E-08	2.26E-08	-0.23
bb	8.86E-09	8.84E-09	0.21
AI	2.96E-09	2.96E-09	-0.03
LN(TH)	6.20E-10	6.20E-10	-0.04
ESOPHAGUS	1.39E-10	1.39E-10	-0.04
REMAINDER	**9.00E-11**	**9.00E-11**	**0.02**
C.E.D.	**2.06E-09**	**2.06E-09**	**-0.24**
Maximum			**-0.30**

C.10.110.2. Acute Inhalation (Type S: f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.27E-10	1.27E-10	-0.01
URIN BLADDER	6.08E-11	6.08E-11	-0.01
BRAIN	1.26E-11	1.26E-11	0.02
BREAST	1.23E-10	1.23E-10	-0.05
GALL BLADDER	8.98E-11	N/A	N/A
HEART	2.43E-10	N/A	N/A
KIDNEYS	5.24E-11	5.24E-11	-0.02
LIVER	1.21E-10	1.21E-10	-0.02
MUSCLE	7.89E-11	7.89E-11	-0.02
OVARIES	1.95E-10	1.95E-10	0.01
PANCREAS	1.06E-10	1.06E-10	-0.02
TESTES	1.45E-11	1.45E-11	0.01
THYROID	4.96E-11	4.96E-11	-0.03
R.B.M.	9.49E-11	9.50E-11	-0.02
BONE SURFACE	2.18E-10	2.18E-10	-0.02
STOMACH	1.71E-10	1.71E-10	-0.04
S.I.	3.34E-10	3.34E-10	-0.01
U.L.I.	1.20E-09	1.20E-09	0.03
L.L.I.	3.14E-09	3.14E-09	0.01
SKIN	2.89E-11	2.89E-11	-0.04
SPLEEN	1.02E-10	1.02E-10	-0.02
THYMUS	1.62E-10	1.62E-10	-0.06
UTERUS	8.78E-11	8.78E-11	0.00
ET	6.83E-09	6.83E-09	-0.02
LUNG	1.68E-08	1.69E-08	-0.30
COLON	2.04E-09	2.04E-09	0.05
ET1	1.17E-06	1.17E-06	0.03
ET2	5.67E-09	5.67E-09	-0.02
LN(ET)	2.86E-09	2.86E-09	0.01
BBsec	4.40E-08	4.41E-08	-0.21
BBbas	2.74E-08	2.75E-08	-0.23
bb	1.09E-08	1.08E-08	0.18
AI	3.90E-09	3.90E-09	-0.02
LN(TH)	8.18E-10	8.18E-10	-0.04
ESOPHAGUS	1.62E-10	1.62E-10	-0.06
REMAINDER	**8.46E-11**	**8.45E-11**	**0.04**
C.E.D.	**2.36E-09**	**2.37E-09**	**-0.27**
Maximum			**-0.30**

C.10.110.3. Acute Ingestion (f_1 = 0.0005)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	1.86E-11	1.86E-11	-0.01
URIN BLADDER	1.39E-10	1.39E-10	0.02
BRAIN	2.89E-13	2.89E-13	-0.01
BREAST	2.14E-12	2.14E-12	0.00
GALL BLADDER	1.28E-10	N/A	N/A
HEART	6.89E-12	N/A	N/A
KIDNEYS	4.86E-11	4.86E-11	-0.01
LIVER	3.21E-11	3.21E-11	0.00
MUSCLE	4.55E-11	4.55E-11	0.00
OVARIES	4.45E-10	4.45E-10	0.00
PANCREAS	4.54E-11	4.54E-11	-0.01
TESTES	3.29E-11	3.29E-11	-0.01
THYROID	3.71E-13	3.71E-13	0.00
R.B.M.	7.18E-11	7.19E-11	0.00
BONE SURFACE	1.14E-10	1.14E-10	0.02
STOMACH	2.59E-10	2.59E-10	-0.02
S.I.	7.60E-10	7.60E-10	-0.01
U.L.I.	2.75E-09	2.75E-09	0.00
L.L.I.	7.26E-09	7.26E-09	0.00
SKIN	1.23E-11	1.23E-11	-0.02
SPLEEN	3.54E-11	3.54E-11	0.01
THYMUS	1.56E-12	1.56E-12	-0.01
UTERUS	1.99E-10	1.99E-10	0.02
ET	3.71E-13	3.71E-13	0.00
LUNG	4.23E-12	4.24E-12	-0.11
COLON	4.70E-09	4.70E-09	0.04
ET1	3.71E-13	3.71E-13	0.00
ET2	3.71E-13	3.71E-13	0.00
LN(ET)	3.71E-13	3.71E-13	0.00
BBsec	4.23E-12	4.23E-12	0.01
BBbas	4.23E-12	4.23E-12	0.01
bb	4.23E-12	4.23E-12	0.01
AI	4.23E-12	4.23E-12	0.01
LN(TH)	4.23E-12	4.23E-12	0.01
ESOPHAGUS	1.56E-12	1.56E-12	-0.01
REMAINDER	**5.86E-11**	**5.87E-11**	**-0.06**
C.E.D.	**7.07E-10**	**7.06E-10**	**0.04**
Maximum			**-0.11**

C.10.111. ^{65}Zn – Zinc-65

Maximum difference in ***Effective Dose***: **-0.04%** (Inhalation).
Maximum difference in ***Organ Dose***: **-0.13%** (Inhalation/Ingestion – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.04%**.

C.10.111.1. Acute Inhalation (Type S: f_1 = 0.4999)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.7655E-09	2.7660E-09	-0.02
URIN BLADDER	1.6359E-09	1.6360E-09	-0.01
BRAIN	1.5049E-09	1.5050E-09	-0.01
BREAST	2.0070E-09	2.0070E-09	0.00
GALL BLADDER	2.0163E-09	N/A	N/A
HEART	2.9867E-09	N/A	N/A
KIDNEYS	2.0238E-09	2.0240E-09	-0.01
LIVER	2.3422E-09	2.3430E-09	-0.03
MUSCLE	1.8783E-09	1.8790E-09	-0.04
OVARIES	2.0695E-09	2.0700E-09	-0.02
PANCREAS	2.4548E-09	2.4550E-09	-0.01
TESTES	1.4197E-09	1.4200E-09	-0.02
THYROID	1.9578E-09	1.9580E-09	-0.01
R.B.M.	2.6011E-09	2.6020E-09	-0.03
BONE SURFACE	2.7870E-09	2.7880E-09	-0.04
STOMACH	1.9860E-09	1.9860E-09	0.00
S.I.	2.0196E-09	2.0200E-09	-0.02
U.L.I.	2.0198E-09	2.0200E-09	-0.01
L.L.I.	2.3960E-09	2.3960E-09	0.00
SKIN	1.2547E-09	1.2550E-09	-0.02
SPLEEN	2.2404E-09	2.2410E-09	-0.03
THYMUS	2.5374E-09	2.5380E-09	-0.02
UTERUS	1.9280E-09	1.9280E-09	0.00
ET	7.3726E-09	7.3730E-09	-0.01
LUNG	6.4845E-09	6.4930E-09	-0.13
COLON	2.1825E-09	2.1830E-09	-0.02
ET1	3.6248E-08	3.6250E-08	-0.01
ET2	7.3438E-09	7.3440E-09	0.00
LN(ET)	7.2898E-09	7.2900E-09	0.00
BBsec	6.8954E-09	6.8990E-09	-0.05
BBbas	6.5862E-09	6.5890E-09	-0.04
bb	5.9035E-09	5.9040E-09	-0.01
AI	6.8113E-09	6.8120E-09	-0.01
LN(TH)	5.8228E-09	5.8240E-09	-0.02
ESOPHAGUS	2.5374E-09	2.5380E-09	-0.02
REMAINDER	**4.6216E-09**	**4.6220E-09**	**-0.01**
C.E.D.	**2.7999E-09**	**2.8010E-09**	**-0.04**
Maximum			**-0.13**

C.10.111.2. Acute Ingestion (f_1 = 0.4999)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	4.3222E-09	4.3230E-09	-0.02
URIN BLADDER	3.5799E-09	3.5800E-09	0.00
BRAIN	3.1435E-09	3.1440E-09	-0.02
BREAST	2.4471E-09	2.4470E-09	0.00
GALL BLADDER	3.8243E-09	N/A	N/A
HEART	3.3291E-09	N/A	N/A
KIDNEYS	3.8179E-09	3.8180E-09	0.00
LIVER	3.6306E-09	3.6310E-09	-0.01
MUSCLE	3.3496E-09	3.3500E-09	-0.01
OVARIES	4.4863E-09	4.4870E-09	-0.02
PANCREAS	4.1405E-09	4.1410E-09	-0.01
TESTES	3.1262E-09	3.1270E-09	-0.03
THYROID	3.5235E-09	3.5240E-09	-0.01
R.B.M.	4.7649E-09	4.7660E-09	-0.02
BONE SURFACE	5.4138E-09	5.4150E-09	-0.02
STOMACH	3.4267E-09	3.4270E-09	-0.01
S.I.	4.2696E-09	4.2700E-09	-0.01
U.L.I.	4.2529E-09	4.2530E-09	0.00
L.L.I.	5.2393E-09	5.2400E-09	-0.01
SKIN	2.3369E-09	2.3370E-09	0.00

SPLEEN	3.6239E-09	3.6240E-09	0.00
THYMUS	3.2947E-09	3.2950E-09	-0.01
UTERUS	4.1877E-09	4.1880E-09	-0.01
ET	3.5235E-09	3.5240E-09	-0.01
LUNG	3.2429E-09	3.2470E-09	-0.13
COLON	4.6795E-09	4.6800E-09	-0.01
ET1	3.5235E-09	3.5240E-09	-0.01
ET2	3.5235E-09	3.5240E-09	-0.01
LN(ET)	3.5235E-09	3.5240E-09	-0.01
BBsec	3.2429E-09	3.2430E-09	0.00
BBbas	3.2429E-09	3.2430E-09	0.00
bb	3.2429E-09	3.2430E-09	0.00
AI	3.2429E-09	3.2430E-09	0.00
LN(TH)	3.2429E-09	3.2430E-09	0.00
ESOPHAGUS	3.2947E-09	3.2950E-09	-0.01
REMAINDER	**3.3709E-09**	**3.3720E-09**	**-0.03**
C.E.D.	**3.9008E-09**	**3.9020E-09**	**-0.03**
Maximum			**-0.13**

C.10.112. ^{95}Zr – Zirconium-95

Maximum difference in ***Effective Dose***: **-0.29%** (Inhalation – type"S").
Maximum difference in ***Organ Dose***: **-0.35%** (Inhalation – type "S" – Lungs).
Maximum difference excluding ***Respiratory Tract***: **-0.05%**.

C.10.112.1. Acute Inhalation (Type F: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	2.4102E-09	2.4110E-09	-0.03
URIN BLADDER	1.0316E-09	1.0320E-09	-0.04
BRAIN	1.5039E-09	1.5040E-09	-0.01
BREAST	7.7755E-10	7.7780E-10	-0.03
GALL BLADDER	1.1284E-09	N/A	N/A
HEART	1.1691E-09	N/A	N/A
KIDNEYS	1.6472E-09	1.6480E-09	-0.05
LIVER	1.0299E-09	1.0300E-09	-0.01
MUSCLE	1.2405E-09	1.2410E-09	-0.04
OVARIES	1.9270E-09	1.9280E-09	-0.05
PANCREAS	1.4738E-09	1.4740E-09	-0.01
TESTES	6.5156E-10	6.5170E-10	-0.02
THYROID	1.1592E-09	1.1600E-09	-0.07
R.B.M.	9.2497E-09	9.2530E-09	-0.04
BONE SURFACE	6.1540E-08	6.1570E-08	-0.05
STOMACH	9.6943E-10	9.6970E-10	-0.03
S.I.	1.7755E-09	1.7760E-09	-0.03
U.L.I.	2.0332E-09	2.0340E-09	-0.04
L.L.I.	3.5334E-09	3.5340E-09	-0.02
SKIN	8.3108E-10	8.3130E-10	-0.03
SPLEEN	1.0627E-09	1.0630E-09	-0.03
THYMUS	1.0386E-09	1.0390E-09	-0.04
UTERUS	1.3358E-09	1.3360E-09	-0.01
ET	8.6426E-09	8.6420E-09	0.01
LUNG	1.3046E-09	1.3060E-09	-0.11
COLON	2.6819E-09	2.6820E-09	0.00
ET1	1.4556E-06	1.4550E-06	0.04
ET2	7.1944E-09	7.1940E-09	0.01
LN(ET)	6.9289E-09	6.9290E-09	0.00
BBsec	1.3449E-09	1.3450E-09	-0.01
BBbas	1.3286E-09	1.3290E-09	-0.03
bb	1.2920E-09	1.2920E-09	0.00
AI	1.2852E-09	1.2860E-09	-0.06
LN(TH)	1.2844E-09	1.2850E-09	-0.05
ESOPHAGUS	1.0386E-09	1.0390E-09	-0.04
REMAINDER	**1.2717E-09**	**1.2720E-09**	**-0.02**
C.E.D.	**3.0292E-09**	**3.0300E-09**	**-0.03**
Maximum			**-0.11**

C.10.112.2. Acute Inhalation (Type M: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	8.5914E-10	8.5950E-10	-0.04
URIN BLADDER	2.7214E-10	2.7220E-10	-0.02
BRAIN	2.9330E-10	2.9340E-10	-0.03
BREAST	6.2261E-10	6.2280E-10	-0.03
GALL BLADDER	4.2404E-10	N/A	N/A
HEART	1.0221E-09	N/A	N/A
KIDNEYS	4.6231E-10	4.6250E-10	-0.04
LIVER	5.7810E-10	5.7830E-10	-0.03
MUSCLE	4.4258E-10	4.4270E-10	-0.03
OVARIES	6.4437E-10	6.4450E-10	-0.02
PANCREAS	6.0297E-10	6.0320E-10	-0.04
TESTES	1.4031E-10	1.4040E-10	-0.06
THYROID	3.9371E-10	3.9390E-10	-0.05
R.B.M.	1.7629E-09	1.7640E-09	-0.06
BONE SURFACE	9.7560E-09	9.7610E-09	-0.05
STOMACH	5.2612E-10	5.2630E-10	-0.03
S.I.	7.2171E-10	7.2190E-10	-0.03
U.L.I.	1.5554E-09	1.5560E-09	-0.04
L.L.I.	3.5581E-09	3.5580E-09	0.00
SKIN	2.5490E-10	2.5500E-10	-0.04
SPLEEN	5.2715E-10	5.2730E-10	-0.03
THYMUS	7.5621E-10	7.5650E-10	-0.04
UTERUS	3.7069E-10	3.7080E-10	-0.03
ET	1.1870E-08	1.1870E-08	0.00
LUNG	2.2168E-08	2.2240E-08	-0.32
COLON	2.4214E-09	2.4210E-09	0.02
ET1	1.4552E-06	1.4550E-06	0.01
ET2	1.0429E-08	1.0430E-08	-0.01
LN(ET)	6.6570E-09	6.6570E-09	0.00
BBsec	5.4267E-08	5.4380E-08	-0.21
BBbas	3.8956E-08	3.9040E-08	-0.22
bb	1.2932E-08	1.2920E-08	0.09
AI	7.0169E-09	7.0190E-09	-0.03
LN(TH)	2.8534E-09	2.8550E-09	-0.06
ESOPHAGUS	7.5621E-10	7.5650E-10	-0.04
REMAINDER	**4.4859E-10**	**4.4850E-10**	**0.02**
C.E.D.	**3.6080E-09**	**3.6170E-09**	**-0.25**
Maximum			**-0.32**

C.10.112.3. Acute Inhalation (Type S: f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	7.8954E-10	7.8990E-10	-0.05
URIN BLADDER	1.3334E-10	1.3340E-10	-0.04
BRAIN	8.7719E-11	8.7740E-11	-0.02
BREAST	8.2420E-10	8.2460E-10	-0.05
GALL BLADDER	3.6544E-10	N/A	N/A
HEART	1.3813E-09	N/A	N/A
KIDNEYS	3.1800E-10	3.1810E-10	-0.03
LIVER	6.7447E-10	6.7470E-10	-0.03
MUSCLE	3.8607E-10	3.8620E-10	-0.03
OVARIES	4.1167E-10	4.1170E-10	-0.01
PANCREAS	5.9682E-10	5.9710E-10	-0.05
TESTES	4.6647E-11	4.6650E-11	-0.01
THYROID	3.4153E-10	3.4170E-10	-0.05
R.B.M.	5.3699E-10	5.3720E-10	-0.04
BONE SURFACE	6.9952E-10	6.9980E-10	-0.04
STOMACH	5.5098E-10	5.5120E-10	-0.04
S.I.	5.3945E-10	5.3950E-10	-0.01
U.L.I.	1.4579E-09	1.4580E-09	-0.01
L.L.I.	3.4827E-09	3.4830E-09	-0.01
SKIN	1.9660E-10	1.9670E-10	-0.05
SPLEEN	5.8154E-10	5.8180E-10	-0.04
THYMUS	9.7037E-10	9.7080E-10	-0.04
UTERUS	1.9826E-10	1.9830E-10	-0.02
ET	1.4394E-08	1.4400E-08	-0.04
LUNG	2.9388E-08	2.9490E-08	-0.35
COLON	2.3335E-09	2.3330E-09	0.02
ET1	1.4554E-06	1.4550E-06	0.03
ET2	1.2957E-08	1.2960E-08	-0.02
LN(ET)	7.0362E-09	7.0360E-09	0.00
BBsec	6.9101E-08	6.9250E-08	-0.22
BBbas	4.9728E-08	4.9830E-08	-0.20
bb	1.7790E-08	1.7770E-08	0.11
AI	1.1036E-08	1.1040E-08	-0.04
LN(TH)	4.5563E-09	4.5590E-09	-0.06
ESOPHAGUS	9.7037E-10	9.7080E-10	-0.04
REMAINDER	**3.8373E-10**	**3.8350E-10**	**0.06**
C.E.D.	**4.1948E-09**	**4.2070E-09**	**-0.29**
Maximum			**-0.35**

C.10.112.4. Acute Ingestion (f_1 = 0.002)

ORGAN	IMBA (Sv/Bq)	PLEIADES (Sv/Bq)	Difference (%)
ADRENALS	6.4868E-11	6.4870E-11	0.00
URIN BLADDER	2.5555E-10	2.5550E-10	0.02
BRAIN	1.0816E-11	1.0820E-11	-0.04
BREAST	1.5777E-11	1.5780E-11	-0.02
GALL BLADDER	2.3001E-10	N/A	N/A
HEART	2.9855E-11	N/A	N/A
KIDNEYS	1.1838E-10	1.1840E-10	-0.02
LIVER	7.9510E-11	7.9510E-11	0.00
MUSCLE	1.0177E-10	1.0180E-10	-0.03
OVARIES	8.2174E-10	8.2180E-10	-0.01
PANCREAS	1.0538E-10	1.0540E-10	-0.02
TESTES	8.5109E-11	8.5110E-11	0.00
THYROID	9.9090E-12	9.9110E-12	-0.02
R.B.M.	2.1419E-10	2.1420E-10	0.00
BONE SURFACE	5.0008E-10	5.0020E-10	-0.02
STOMACH	3.5638E-10	3.5640E-10	-0.01
S.I.	1.0257E-09	1.0260E-09	-0.03
U.L.I.	3.0792E-09	3.0790E-09	0.01
L.L.I.	7.7862E-09	7.7860E-09	0.00
SKIN	4.0466E-11	4.0470E-11	-0.01
SPLEEN	8.1441E-11	8.1440E-11	0.00
THYMUS	1.4820E-11	1.4820E-11	0.00
UTERUS	3.6392E-10	3.6390E-10	0.01
ET	9.9090E-12	9.9110E-12	-0.02
LUNG	2.3944E-11	2.3970E-11	-0.11
COLON	5.1147E-09	5.1130E-09	0.03
ET1	9.9090E-12	9.9110E-12	-0.02
ET2	9.9090E-12	9.9110E-12	-0.02
LN(ET)	9.9090E-12	9.9110E-12	-0.02
BBsec	2.3944E-11	2.3950E-11	-0.03
BBbas	2.3944E-11	2.3950E-11	-0.03
bb	2.3944E-11	2.3950E-11	-0.03
AI	2.3944E-11	2.3950E-11	-0.03
LN(TH)	2.3944E-11	2.3950E-11	-0.03
ESOPHAGUS	1.4820E-11	1.4820E-11	0.00
REMAINDER	**1.1748E-10**	**1.1750E-10**	**-0.02**
C.E.D.	**8.7951E-10**	**8.7930E-10**	**0.02**
Maximum			**-0.11**

C.11. QA of Doses Received Each Year

In the formal quality assurance (QA) procedures for IMBA Expert™ OCAS/ORAU-Edition (described in Section C.3), it is demonstrated that the equivalent doses calculated by the IMBA modules – over a comprehensive range of time intervals, for all radionuclides implemented, and for a comprehensive range of intake routes and solubility types – are within 1% of those calculated independently by NRPB's separate mainframe code **PLEIADES**. The integration times for these "benchmark" comparisons were 1 d, 7 d, 30 d, 1 y, 5 y, 10 y, 20 y, 30 y, 45 y, and 50 y. Since the calculation of calendar-year-doses uses the same **IMBA** modules, in precisely the same manner, it follows that these dose calculations should all be consistent with the doses calculated by **PLEIADES** for successive annual intervals. However, it remained to be demonstrated that the implementation of the **IMBA** modules for calculating successive annual doses within the IMBA Expert™ code is also correct. This was demonstrated in two stages, as follows.

C.11.1. Validation of Doses Calculated for Complete Calendar Years

The validation steps were:

1. Calendar-year-doses were calculated in annual increments from 1 to 45 years after an intake.
2. Doses calculated for the first year were compared directly with those benchmarked (in Section 10) for a 1-y integration period.
3. Annual doses calculated over the first 10 y were summed, and compared directly with those benchmarked (in Section 10) for a 10-y integration period.
4. Annual doses calculated over 45 y were summed, and compared directly with those benchmarked (in Section 10) for a 45-y integration period.

C.11.2. Validation of Doses Calculated for Final (Partial) Calendar Year

This was achieved by assuming that at 50 y after intake, the dose rate in any organ is relatively constant over that year. Thus, the dose received in the partial year should be directly proportional to the length of the time interval. The intervals chosen were 1 d, 10 d, and 100 d.

C.11.3. Examples of QA Results

The following Tables give the QA results obtained for acute inhalation of a 5-μm-AMAD aerosol of ^{239}Pu, of solubility type "M", with all other parameters set by ICRP default values. Equivalent doses were calculated using the '**Equivalent Dose to selected organ received in each calendar year**' facility in IMBA Expert™ OCAS/ORAU-Edition, and the resulting values were exported directly to a spreadsheet (using the built-in '**Export Tool**').

C.11.3.1. 1-y Dose (non-leap year)

Organ	Equivalent Doses Calculated in Formal Benchmark QA, Sv	Equivalent Doses Calculated using 'Calendar Year Dose' Option, Sv	Difference, %
Adrenals	5.815E-08	5.815E-08	0.000
Urinary Bladder	5.817E-08	5.817E-08	0.000
Brain	5.815E-08	5.815E-08	0.000
Breast	5.815E-08	5.815E-08	0.000
Gall Bladder	5.815E-08	5.815E-08	0.000
Heart	5.815E-08	5.815E-08	0.000
Kidney	5.303E-07	5.303E-07	0.000
Liver	4.246E-06	4.246E-06	0.000
Muscle	5.815E-08	5.815E-08	0.000
Ovaries	2.542E-07	2.542E-07	0.000
Pancreas	5.815E-08	5.815E-08	0.000
Testes	2.590E-07	2.590E-07	0.000
Thyroid	5.815E-08	5.815E-08	0.000
R.B.M.	2.515E-06	2.515E-06	0.000
Bone Surface	2.531E-05	2.531E-05	0.000
Stomach	5.865E-08	5.865E-08	0.000
S.I.	5.941E-08	5.941E-08	0.000
U.L.I.	6.576E-08	6.576E-08	0.000
L.L.I.	8.046E-08	8.046E-08	0.000
Skin	5.815E-08	5.815E-08	0.000
Spleen	5.815E-08	5.815E-08	0.000
Thymus	5.815E-08	5.815E-08	0.000
Uterus	5.815E-08	5.815E-08	0.000
Extra-Thoracic	1.173E-05	1.173E-05	0.000
Lung	1.870E-05	1.870E-05	0.000
Colon	7.211E-08	7.211E-08	0.000
ET1	1.506E-06	1.506E-06	0.000
ET2	1.175E-05	1.175E-05	0.000
LN(ET)	3.947E-07	3.947E-07	0.000
BB_{sec}	4.982E-05	4.982E-05	0.000
BB_{bas}	3.618E-06	3.618E-06	0.000
bb	2.209E-05	2.209E-05	0.000
AI	7.327E-06	7.327E-06	0.000
LN(TH)	1.999E-06	1.999E-06	0.000
Esophagus	5.815E-08	5.815E-08	0.000

C.11.3.2. 10-y Dose

Organ	Equivalent Doses Calculated in Formal Benchmark QA, Sv	Equivalent Doses Calculated using 'Calendar Year Dose' Option, Sv	Difference[(a)], %
Adrenals	4.274E-07	4.273E-07	0.037
Urinary Bladder	4.275E-07	4.273E-07	0.038
Brain	4.274E-07	4.273E-07	0.038
Breast	4.274E-07	4.273E-07	0.037
Gall Bladder	4.275E-07	4.273E-07	0.037
Heart	4.274E-07	4.273E-07	0.038
Kidney	1.938E-06	1.938E-06	0.024
Liver	5.330E-05	5.327E-05	0.054
Muscle	4.274E-07	4.273E-07	0.038
Ovaries	3.175E-06	3.173E-06	0.057
Pancreas	4.274E-07	4.273E-07	0.038
Testes	3.235E-06	3.234E-06	0.054
Thyroid	4.274E-07	4.273E-07	0.037
R.B.M.	1.971E-05	1.970E-05	0.038
Bone Surface	2.559E-04	2.558E-04	0.049
Stomach	4.279E-07	4.278E-07	0.037
S.I.	4.287E-07	4.285E-07	0.037
U.L.I.	4.351E-07	4.349E-07	0.036
L.L.I.	4.499E-07	4.498E-07	0.034
Skin	4.274E-07	4.273E-07	0.037
Spleen	4.274E-07	4.273E-07	0.037
Thymus	4.274E-07	4.273E-07	0.037
Uterus	4.274E-07	4.273E-07	0.037
Extra-Thoracic	1.357E-05	1.357E-05	-0.002
Lung	1.939E-05	1.939E-05	0.004
Colon	4.415E-07	4.413E-07	0.036
ET1	1.876E-06	1.876E-06	0.005
ET2	1.359E-05	1.359E-05	0.003
LN(ET)	9.956E-07	9.955E-07	0.016
BB_{sec}	5.020E-05	5.020E-05	0.000
BB_{bas}	4.001E-06	4.001E-06	0.003
bb	2.254E-05	2.254E-05	-0.001
AI	8.577E-06	8.577E-06	0.001
LN(TH)	3.077E-06	3.077E-06	0.005
Esophagus	4.274E-07	4.273E-07	0.037

[(a)] In general, the 'Calendar Year Dose' values are marginally higher than the corresponding 'Formal Benchmark QA' values because leap years are included in the former. PLEIADES (and ICRP) assume a constant 365-d year (*i.e.*, no leap years). Variation in the 'Difference' value is due to rounding error.

C.11.3.3. 45-y Dose

Organ	Equivalent Doses Calculated in Formal Benchmark QA, Sv	Equivalent Doses Calculated using 'Calendar Year Dose' Option, Sv	Difference[(a)], %
Adrenals	1.575E-06	1.574E-06	0.068
Urinary Bladder	1.576E-06	1.575E-06	0.065
Brain	1.575E-06	1.574E-06	0.067
Breast	1.575E-06	1.574E-06	0.066
Gall Bladder	1.576E-06	1.575E-06	0.064
Heart	1.575E-06	1.574E-06	0.066
Kidney	3.886E-06	3.885E-06	0.033
Liver	1.943E-04	1.942E-04	0.047
Muscle	1.575E-06	1.574E-06	0.067
Ovaries	1.210E-05	1.210E-05	0.051
Pancreas	1.575E-06	1.574E-06	0.067
Testes	1.233E-05	1.233E-05	0.046
Thyroid	1.575E-06	1.574E-06	0.066
R.B.M.	4.542E-05	4.540E-05	0.036
Bone Surface	9.307E-04	9.302E-04	0.054
Stomach	1.576E-06	1.575E-06	0.066
S.I.	1.577E-06	1.576E-06	0.064
U.L.I.	1.583E-06	1.582E-06	0.068
L.L.I.	1.598E-06	1.597E-06	0.064
Skin	1.575E-06	1.574E-06	0.066
Spleen	1.575E-06	1.574E-06	0.066
Thymus	1.575E-06	1.574E-06	0.066
Uterus	1.575E-06	1.574E-06	0.066
Extra-Thoracic	1.471E-05	1.471E-05	0.005
Lung	2.054E-05	2.054E-05	0.004
Colon	1.590E-06	1.589E-06	0.065
ET1	3.024E-06	3.023E-06	0.033
ET2	1.474E-05	1.474E-05	0.010
LN(ET)	2.144E-06	2.143E-06	0.049
BB_{sec}	5.135E-05	5.135E-05	0.002
BB_{bas}	5.149E-06	5.148E-06	0.020
bb	2.369E-05	2.369E-05	0.003
AI	9.725E-06	9.724E-06	0.010
LN(TH)	4.225E-06	4.224E-06	0.025
Esophagus	1.575E-06	1.574E-06	0.066

[(a)] In general, the 'Calendar Year Dose' values are marginally higher than the corresponding 'Formal Benchmark QA' values because leap years are included in the former. PLEIADES (and ICRP) assume a constant 365-d year (*i.e.*, no leap years). Variation in the 'Difference' value is due to rounding error.

C.11.3.4. Final-y dose (1-d interval)

Organ	Equivalent Doses Calculated for 50th Year, Sv	Equivalent Doses in 50th Year ÷ 365, Sv	Equivalent Doses Calculated from January 1st to 2nd in 50th Year, Sv	Difference, %
Adrenals	3.491E-08	9.564E-11	9.555E-11	-0.102
Urinary Bladder	3.491E-08	9.565E-11	9.555E-11	-0.105
Brain	3.491E-08	9.564E-11	9.554E-11	-0.104
Breast	3.491E-08	9.564E-11	9.554E-11	-0.106
Gall Bladder	3.491E-08	9.565E-11	9.555E-11	-0.105
Heart	3.491E-08	9.564E-11	9.554E-11	-0.106
Kidney	4.043E-08	1.108E-10	1.114E-10	0.554
Liver	2.846E-06	7.798E-09	7.850E-09	0.669
Muscle	3.491E-08	9.564E-11	9.554E-11	-0.104
Ovaries	1.841E-07	5.045E-10	5.079E-10	0.672
Pancreas	3.491E-08	9.564E-11	9.554E-11	-0.104
Testes	1.877E-07	5.142E-10	5.177E-10	0.675
Thyroid	3.491E-08	9.564E-11	9.554E-11	-0.106
R.B.M.	5.036E-07	1.380E-09	1.388E-09	0.567
Bone Surface	1.561E-05	4.276E-08	4.297E-08	0.500
Stomach	3.491E-08	9.564E-11	9.554E-11	-0.106
S.I.	3.491E-08	9.564E-11	9.554E-11	-0.104
U.L.I.	3.491E-08	9.565E-11	9.555E-11	-0.107
L.L.I.	3.491E-08	9.565E-11	9.556E-11	-0.104
Skin	3.491E-08	9.564E-11	9.554E-11	-0.106
Spleen	3.491E-08	9.564E-11	9.554E-11	-0.106
Thymus	3.491E-08	9.564E-11	9.554E-11	-0.106
Uterus	3.491E-08	9.564E-11	9.554E-11	-0.106
Extra-Thoracic	3.491E-08	9.564E-11	9.554E-11	-0.106
Lung	3.491E-08	9.564E-11	9.554E-11	-0.104
Colon	3.491E-08	9.565E-11	9.555E-11	-0.106
ET1	3.491E-08	9.564E-11	9.554E-11	-0.106
ET2	3.491E-08	9.564E-11	9.554E-11	-0.106
LN(ET)	3.491E-08	9.564E-11	9.554E-11	-0.106
BB_{sec}	3.491E-08	9.564E-11	9.554E-11	-0.104
BB_{bas}	3.491E-08	9.564E-11	9.554E-11	-0.104
bb	3.491E-08	9.564E-11	9.554E-11	-0.104
AI	3.491E-08	9.564E-11	9.554E-11	-0.104
LN(TH)	3.491E-08	9.564E-11	9.554E-11	-0.104
Esophagus	3.491E-08	9.564E-11	9.554E-11	-0.106

C.11.3.5. Final-y dose (10-d interval)

Organ	Equivalent Doses Calculated for 50th Year, Sv	Equivalent Doses in 50th Year ÷ 36.5, Sv	Equivalent Doses Calculated from January 1st to 11th in 50th Year, Sv	Difference, %
Adrenals	3.491E-08	9.564E-10	9.555E-10	-0.101
Urinary Bladder	3.491E-08	9.565E-10	9.555E-10	-0.103
Brain	3.491E-08	9.564E-10	9.555E-10	-0.101
Breast	3.491E-08	9.564E-10	9.555E-10	-0.102
Gall Bladder	3.491E-08	9.565E-10	9.555E-10	-0.102
Heart	3.491E-08	9.564E-10	9.555E-10	-0.102
Kidney	4.043E-08	1.108E-09	1.114E-09	0.545
Liver	2.846E-06	7.798E-08	7.849E-08	0.652
Muscle	3.491E-08	9.564E-10	9.555E-10	-0.102
Ovaries	1.841E-07	5.045E-09	5.078E-09	0.655
Pancreas	3.491E-08	9.564E-10	9.555E-10	-0.102
Testes	1.877E-07	5.142E-09	5.176E-09	0.656
Thyroid	3.491E-08	9.564E-10	9.555E-10	-0.102
R.B.M.	5.036E-07	1.380E-08	1.387E-08	0.553
Bone Surface	1.561E-05	4.276E-07	4.297E-07	0.491
Stomach	3.491E-08	9.564E-10	9.555E-10	-0.102
S.I.	3.491E-08	9.564E-10	9.555E-10	-0.102
U.L.I.	3.491E-08	9.565E-10	9.555E-10	-0.104
L.L.I.	3.491E-08	9.565E-10	9.556E-10	-0.101
Skin	3.491E-08	9.564E-10	9.555E-10	-0.102
Spleen	3.491E-08	9.564E-10	9.555E-10	-0.102
Thymus	3.491E-08	9.564E-10	9.555E-10	-0.102
Uterus	3.491E-08	9.564E-10	9.555E-10	-0.102
Extra-Thoracic	3.491E-08	9.564E-10	9.555E-10	-0.102
Lung	3.491E-08	9.564E-10	9.555E-10	-0.101
Colon	3.491E-08	9.565E-10	9.555E-10	-0.103
ET1	3.491E-08	9.564E-10	9.555E-10	-0.102
ET2	3.491E-08	9.564E-10	9.555E-10	-0.102
LN(ET)	3.491E-08	9.564E-10	9.555E-10	-0.102
BB_{sec}	3.491E-08	9.564E-10	9.555E-10	-0.101
BB_{bas}	3.491E-08	9.564E-10	9.555E-10	-0.101
bb	3.491E-08	9.564E-10	9.555E-10	-0.101
AI	3.491E-08	9.564E-10	9.555E-10	-0.101
LN(TH)	3.491E-08	9.564E-10	9.555E-10	-0.101
Esophagus	3.491E-08	9.564E-10	9.555E-10	-0.102

C.11.3.5. Final-y dose (100-d interval)

Organ	Equivalent Doses Calculated for 50th Year, Sv	Equivalent Doses in 50th Year ÷ 3.65, Sv	Equivalent Doses Calculated from January 1st to April 11th in 50th Year, Sv	Difference, %
Adrenals	3.491E-08	9.564E-09	9.557E-09	-0.075
Urinary Bladder	3.491E-08	9.565E-09	9.557E-09	-0.077
Brain	3.491E-08	9.564E-09	9.557E-09	-0.076
Breast	3.491E-08	9.564E-09	9.557E-09	-0.076
Gall Bladder	3.491E-08	9.565E-09	9.557E-09	-0.077
Heart	3.491E-08	9.564E-09	9.557E-09	-0.076
Kidney	4.043E-08	1.108E-08	1.112E-08	0.402
Liver	2.846E-06	7.798E-07	7.836E-07	0.487
Muscle	3.491E-08	9.564E-09	9.557E-09	-0.076
Ovaries	1.841E-07	5.045E-08	5.070E-08	0.490
Pancreas	3.491E-08	9.564E-09	9.557E-09	-0.076
Testes	1.877E-07	5.142E-08	5.167E-08	0.493
Thyroid	3.491E-08	9.564E-09	9.557E-09	-0.076
R.B.M.	5.036E-07	1.380E-07	1.386E-07	0.417
Bone Surface	1.561E-05	4.276E-06	4.291E-06	0.363
Stomach	3.491E-08	9.564E-09	9.557E-09	-0.076
S.I.	3.491E-08	9.564E-09	9.557E-09	-0.076
U.L.I.	3.491E-08	9.565E-09	9.558E-09	-0.078
L.L.I.	3.491E-08	9.565E-09	9.558E-09	-0.075
Skin	3.491E-08	9.564E-09	9.557E-09	-0.076
Spleen	3.491E-08	9.564E-09	9.557E-09	-0.076
Thymus	3.491E-08	9.564E-09	9.557E-09	-0.076
Uterus	3.491E-08	9.564E-09	9.557E-09	-0.076
Extra-Thoracic	3.491E-08	9.564E-09	9.557E-09	-0.076
Lung	3.491E-08	9.564E-09	9.557E-09	-0.076
Colon	3.491E-08	9.565E-09	9.558E-09	-0.077
ET1	3.491E-08	9.564E-09	9.557E-09	-0.076
ET2	3.491E-08	9.564E-09	9.557E-09	-0.076
LN(ET)	3.491E-08	9.564E-09	9.557E-09	-0.076
BB_{sec}	3.491E-08	9.564E-09	9.557E-09	-0.076
BB_{bas}	3.491E-08	9.564E-09	9.557E-09	-0.076
bb	3.491E-08	9.564E-09	9.557E-09	-0.076
AI	3.491E-08	9.564E-09	9.557E-09	-0.076
LN(TH)	3.491E-08	9.564E-09	9.557E-09	-0.076
Esophagus	3.491E-08	9.564E-09	9.557E-09	-0.076

Note: Similar QA comparisons for other examples of equivalent doses calculated using IMBA Expert™ OCAS/ORAU-Edition (Version 4.0) for complete and partial calendar years are available (on request) from ACJ & Associates, Inc.

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